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AN INTERDISCIPLINARY JOURNAL OF PUBLIC POLICY ANALYSIS

CATO SYMPOSIUM ON THE NEW FEDERALISM AND URBAN OPPORTUNITIES

Edward C. Banfield — The Zoning of Enterprise
Comments by **Claude E. Barfield** and **Jennifer Roback**

Peter J. Ferrara — The Rationale for Enterprise Zones

Stuart M. Butler — The Enterprise Zone as a Political Animal
Comment by **John Rees**

Otto A. Davis and Denise DiPasquale — Enterprise Zones: New Deal, Old Deal, or No Deal?
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John W. Sommer — The Post-Interventionist City
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VOLUME 2 NUMBER 2 PUBLISHED BY THE CATO INSTITUTE FALL 1982

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The CATO JOURNAL is regularly abstracted in *Current Contents/Social and Behavioral Sciences* and *Social Sciences Citation Index,* both produced by the Institute for Scientific Information. The Journal is available on microfilm from University Microfilms International, Ann Arbor, Michigan 48106.

Printed in the United States of America.

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CATO SYMPOSIUM ON THE NEW FEDERALISM AND URBAN OPPORTUNITIES

INTRODUCTION

We must not overlook the fact that the market has, on the whole, guided the evolution of cities more successfully, though imperfectly, than is commonly realized and that most of the proposals to improve upon this, not by making it work better, but by superimposing a system of central direction, show little awareness of what such a system would have to accomplish, even to equal the market in effectiveness.

Indeed, when we look at the haphazard manner in which governments, with seemingly no clear conception of the forces that determined the development of cities, have generally dealt with these difficult problems, we wonder that the evils are not greater than they are. Many of the policies intended to combat particular evils have actually made them worse.

—Friedrich A. Hayek[1]

The persistence of high unemployment, small business failures, a large core of disadvantaged persons, and other problems in our center cities, as well as a need to improve the federal structure, has prompted the Reagan administration to propose a new urban policy: the "New Federalism." This policy consists of three major elements.

1. Enterprise zones are to be created in depressed urban areas to provide tax and regulatory relief. According to President Reagan, such zones are intended to "remove government barriers, freeing

[1]*The Constitution of Liberty* (Chicago: Henry Regnery Co., 1972), p.342.

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individuals to create, produce and earn their own wages and profits."[2]

2. Numerous programs are to be returned to the states and localities, including Aid to Families with Dependent Children (AFDC), while the federal government is to acquire full responsibility for Medicaid.

3. Categorical state and local grants are to be consolidated into "block grants." This is intended to give state and local officials more discretion in allocating tax dollars. It is believed that this will increase efficiency by directing resources to those uses deemed most valuable by concerned citizens rather than by federal bureaucrats.

The architects of this new urban policy perceive the city as a place of opportunity, if only market forces are released from the grip of government. The city can then become a dynamic center of economic activity and growth. At least that is the rhetoric.

Given certain basic economic principles, like the law of demand (individuals will undertake more of any action at a low than at a high price), combined with an understanding of the effect of private versus public ownership on incentives, we can gain some useful insights into the New Federalism. For instance, if state and local officials perceive that lobbying time is now better spent trying to obtain the right from Washington to create urban enterprise zones, the New Federalism could spur competition for deregulation. This would certainly be a reversal of the past competition for ever larger federal handouts.

On the other hand, decentralization of programs and grant consolidation will not in themselves reduce the size and power of the public sector. As long as *government* officials are in charge, the perverse incentives that operate at the federal level will be duplicated at the state and local levels. Thus, what is needed is a radical decentralization, one that moves activities to the private sector rather than to another level of government. The Reagan proposal for a new urban policy is not entirely lacking in this respect—it does recommend lower taxes, deregulation, and the privatization of certain public services—but it does not present us with a clear, consistent free-market agenda. By failing to achieve this, the Enterprise Zone proposal (which does not eliminate one of the major causes of unemployment among disadvantaged, low-productivity workers—the minimum wage), and other parts of the New Federalism package may become so politicized that the end result could be highly undesirable, good intentions aside.

[2]President Ronald Reagan, quoted in Stuart Butler, "The Enterprise Zone Tax Act of 1982: The Administration's Plan," Heritage Foundation *Issue Bulletin* No. 80, March 29, 1982, p.2.

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In order to carefully examine the implications of a restructured urban policy, the Cato Institute sponsored a major conference on "The New Federalism and Urban Opportunities." The Political Economy Research Institute in Richardson, Texas, helped organize this conference, which was held last May in Santa Fe, New Mexico. The conference proceedings constitute one of the few systematic analyses of the Reagan administration's policy shift, and should help improve our understanding of the complexity of modern urban areas, as well as the problems involved in moving toward a truly free economy. The following papers from the conference explore the nature of cities, their problems, and their future under alternative policy agendas.

J.A. Dorn
Editor

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THE ZONING OF ENTERPRISE

Edward C. Banfield

This paper seeks to make two principal points. The first is that upward mobility on the part of disadvantaged persons in the cities has been, is being, and doubtlessly will be, hampered by laws and regulations the manifest purpose of which is to make them better off. The second is that as our society becomes more sensitive to social injustices (real and imagined) it thereby becomes less capable of coping with certain of its problems; indeed, it increasingly confronts the dilemma that a good society, if it is to remain one, must sometimes do things that are incompatible with its goodness.

The word "disadvantaged" as used here refers to persons who are unskilled or low-skilled, whose command of English is poor or non-existent, who are subject to discrimination because of race or class, and who live in an urban enclave consisting predominantly or entirely of the disadvantaged. As used here, then, the word is not synonymous with "poor," although for obvious reasons disadvantaged persons are almost certain to be poor. Nor is it synonymous with "lower class," a term which, as I use it, refers to those whose style of life reflects unwillingness, or inability, to take account of the future. Some disadvantaged persons are ambitious, hard-working, frugal, mindful of their obligations to family. Others more or less lack these qualities. Those who lack them entirely are the extreme case of the lower class.

The Administration's Proposal

In March 1982 the President announced his long-awaited Enterprise Zone proposal. The main idea is to offer tax credits that will encourage small businesses to locate in 75 yet-to-be-chosen depressed urban areas. There would no federal grants or other direct interven-

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tion. In choosing among applications made by cities and states, the Secretary of HUD would take into account commitments to afford tax and regulatory relief, improve public services, involve neighborhood organizations, give job training, and offer other incentives.[1]

Judging from press accounts, no one – not the President, not those of his assistants who worked out the plan, not local officials, businessmen, or community leaders – is enthusiastic about the plan. Indeed, it is pretty clear that they do not expect it to work. The best one can say for it, those most involved seem to agree, is that it will show that the administration is "trying," and the cost (in tax collections forgone) will be small. Small firms, a Heritage Foundation Bulletin points out, are by far the most effective job creators, but the administration's proposal offers these "almost nothing." What such firms typically need, the bulletin says, is start-up capital. "The prospect of a small tax benefit at some future date, and then only if a zone business is successful, will hardly prompt investors to flock to the inner cities."[2]

Even if enterprise zones *do* attract new businesses it cannot be assumed that this will have much effect on the character of the areas. In the typical depressed area there is a concentration of lower class persons. As Anthony Downs writes in a study for the Brookings Institution, "many residents there never have the conventions of civilized life instilled in their minds and behavior."[3] Among the "intractable aspects" of life in these areas, he says, are values grounded on "low self-esteem, feelings of personal powerlessness, hostility toward others, admiration of criminal and other anti-social behavior, lack of respect for hard work or education, and cynicism." Nearly all attempts to improve the quality of life without changing the residents' values have failed, he writes, "even when those attempts were supported by significant resources."

Some will say, perhaps, that if the Enterprise Zones do not attract new businesses or the new businesses do not change the character of the areas nothing much will have been lost. This is surely too simple a view of the matter. If, being politically painless, the Enterprise Zone idea precludes action – certain to be very painful – to

[1]The President's Message to Congress on the plan is excerpted in the *New York Times*, March 24, 1982, p. 8. The plan is described and analyzed in the Heritage Foundation's *Issue Bulletin* of March 29, 1982.

[2]Ibid., p. 9.

[3]Anthony Downs, *Neighborhoods and Urban Development* (Washington,D.C.: Brookings Institution, 1981), pp. 112 and 120. Downs assures the reader that his conclusions are "not based upon 'racism' or any other biased perspective but upon simple recognition of reality." He says that his remarks "should not be construed as 'blaming the victims'. . ." pp. 122–123.

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encourage movement from the depressed areas to places where cultural and economic opportunities are better, great harm will have been done.[4] Moreover, when the futility of the undertaking has been demonstrated, the anger and cynicism of the residents of the depressed areas and that of their sympathizers elsewhere will certainly rise. This is a cost that may prove large.

The IBM Experiment

In 1968 the IBM Corporation, at the initiative of its chairman, Thomas J. Watson, Jr., established a small manufacturing plant in the center of one of the country's most depressed areas – the Bedford-Stuyvesant section of Brooklyn.[5] Watson wanted to demonstrate that a well-managed company could successfully employ and train for promotion the so-called hard-core unemployed. Because of high land costs, stringent building codes, and other municipal regulations, and poor access to major transportation, the inner-city location was costly as compared with a suburban one and still more as compared with adding workers to existing plants. Other costs were also high. The workers – there were to be about 400 of them – were not only unskilled but unused to the discipline of a workplace. IBM's purpose being to demonstrate what could be done with the hard-core, it intended to hire only men who had been unemployed for three months or more – only men because it was widely supposed that black males were victims of "matriarchy." In the planning stage no one doubted that these conditions could easily be met; the unemployment rate in Bedford-Stuyvesant was notoriously high.

After about a year the plant manager found it necessary to relax the rule against hiring women and employed persons. Although he was willing to take boys as young as 16, to be patient with workers who did not get to work on time (a foreman would go to a man's home to get him out of bed if necessary), and to overlook arrest records for all but very serious offenses, and although the plant's mission was a simple one (assembling cables for computers), it did not seem possible to get the work done solely with recruits from among unemployed males. The awkward fact was that few of these wanted to work for IBM despite its offer of job security, high wages, training, clean toilets, patient foremen, and an all-black environment.

[4]This point is made by Donald A. Hicks, "Reindustrialization and American Urban Policy in the 1980s," to appear in Transaction/*SOCIETY* in early 1982.

[5]The account of the IBM plant is based on Edward C. Banfield, "An Act of Corporate Citizenship," in Peter B. Doeringer, ed., *Programs to Employ the Disadvantaged* (Englewood Cliffs, N.J.: Prentice-Hall, 1969), pp. 26–57.

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The lesson to be learned from IBM's experience is that many unemployed males in a depressed area do not value these benefits as much as one might expect. If he must pay for them by accepting the discipline of a well-run workplace – if he must work whether he feels like it or not, learn new skills, take responsibility, and so on – a worker who is accustomed to the lower-class style of life, or to one approximating it, may not accept opportunities of the kind that IBM presents.

The kind of firm that could succeed in a place like Bedford-Stuyvesant and in succeeding, offer some opportunities – very limited ones, to be sure – to persons who are out of, or almost out of, the labor force is in almost all respects the opposite of IBM. Such a firm pays low wages (below the minimum when possible), offers no job security (like the workers it employs, it is here today and gone tomorrow), its rest rooms are dirty, its foremen are rough, it does not trouble itself about the health and safety of its workers (they can take their chances or get out), and it does not ask them to learn skills, take responsibility, or contribute to factory morale (its investment is a short-term one). This is the only kind of firm that can profitably hire the lower-class worker. It is also the only kind of firm that the typical unemployed male will work for. If he comes to work one day and not the next, nobody cares. If he comes late and half-drunk, nobody cares (although he may be told to stay away until he is sober).

Firms of this sort were once common in the cities. They were driven out by laws and ordinances intended to improve working conditions (or, if one prefers, to eliminate "unfair" competition with firms operating more nearly in the IBM manner). Driving such firms out did not improve working conditions for most workers: It merely put them out of work or moved them into illegal activities.

Removing Government Barriers

What is needed to improve job and other opportunities for disadvantaged workers is not tax incentives for employers but removal of a variety of barriers that have been placed in their way by government in recent decades.

There follows a list of measures that should be taken to open opportunities for the disadvantaged.

1. Repeal minimum wage laws, which cause withdrawal from the labor force and unemployment, especially among males in their early teens and twenties, and probably also an increase in felony crime.[6]

[6]For a wide-ranging collection of essays on the minimum wage, see Simon Rottenberg,

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2. Remove licensing and other impediments, notably the union shop, to entry into low- and semi-skilled occupations such as barber, taxi driver, and practical nurse. In New York City, Thomas Sowell has observed, where a license to drive a taxi costs $60,000, cab drivers are mostly white, whereas in Washington, where the license costs $200, they are mostly black.[7]

3. Repeal (or relax enforcement of) laws and ordinances that set unreasonably high standards for "conditions of work" and for housing construction and maintenance. Most states, Anthony Downs writes, do not prevent localities from requiring housing standards "far surpassing any required to protect the health and safety of the occupants."[8] Housing code administrators, he says, should recognize that "housing in low-income neighborhoods cannot be kept to the standards of housing in high income neighborhoods."[9]

4. Reduce the flow of low-skilled and unskilled immigrants. Legal immigration to the United States has increased greatly in recent decades: from 2.5 million in the 1950s to an estimated 4.3 million in the 1970s. Until 1960, the overwhelming majority came from Europe; in the 1970s only 18 percent came from Europe. Immigration now is mainly from Latin America and Asia. The present law tends to favor the unskilled.[10] Estimates vary widely, but illegal immigration may equal or more than equal legal immigration. About half the illegal immigrants are probably Mexican nationals. The number of these will doubtless increase: The Mexican labor force, 30–40 percent of which is unemployed, is expected to double in the next 20 years.

5. Repeal laws and change policies the effect of which is to reduce the supply and raise the price of low-cost housing. This includes

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The Economics of Legal Minimum Wages (Washington, D.C.: American Enterprise Institute, 1981). See also the paper by John Cogan, who estimates that the minimum wage is responsible for about 40 percent of the decline in black teenage employment between 1959 and 1978, mainly by preventing those displaced from agricultural work from finding jobs in industry. John Cogan, "Black Teenage Employment and the Minimum Wage: A Time Series Analysis," *Working Papers in Economics, No. E-81-11* (Stanford, Calif.: Hoover Institution, September 1981). See also his *Working Paper No. 683*, National Bureau of Economic Research, 1982.

[7]*Meet the Press*, September 29, 1981 (Washington D.C.: Kelly Press), p.6.

[8]Downs, p. 127; see also p. 164.

[9]Ibid., p. 164.

[10]Barry R. Chiswick, "Guidelines for the Reform of Immigration Policy," in William Fellner, ed., *Essays in Contemporary Economic Problems* (Washington, D.C.: American Enterprise Institute, 1981), pp. 309–347. " A cohort of unskilled immigrants," Chiswick says, "depresses the earnings of low-skilled American workers but raises the earnings of high-skilled workers and the owners of capital." pp. 309–310.

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repealing rent control laws which reduce investment in the maintenance of housing; ending subsidization of urban renewal and other projects which displace low-income people; revising zoning laws which tend to prevent housing from being passed on to the poor more or less as second-hand automobiles are; and repealing "tenant protection" laws which make eviction of destructive occupants all but impossible, thus precipitating the rapid decline of good neighborhoods.

6. With respect to public housing, change laws and regulations so as not to discourage upward mobility on the part of tenants. Under present law no more than 10 percent of the national supply may be rented to families with incomes 50 percent or more above the median family income. This gives some families an incentive to keep their income down; without a substantial percentage of upwardly mobile families, projects are apt to be "taken over" by the disreputable poor and eventually destroyed.

7. The quality of schooling should be improved by removing students who are disruptive (Downs says that the "state should permit public schools to suspend or expel disruptive students"[11]), and by introducing competition among schools by means of the voucher plan or otherwise ("Using public funds to provide at least some support to privately run schools," Downs writes, "would enable some students now attending public schools to switch to private ones"[12]). Efforts at racial integration should be dropped where it is clear that their incidental effect is to impair learning, and bilingual teaching should be stopped except as it is useful for the teaching of English.[13] The performance of pupils should be carefully monitored with standard tests, and only those able to perform at grade level should be promoted. School administrators should have authority to discharge incompetent teachers.

Whereas the barriers that have been listed make it difficult or impossible for the disadvantaged person to get his foot on the bottom

[11]Downs, p. 132.

[12]Ibid., p. 132.

[13]In his account of his service as Secretary of HEW, Joseph A. Califano, Jr., remarks that the bilingual program "had become captive of the professional Hispanic and other ethnic groups. . ." and that as a result "too little attention was paid to teaching children English, and far too many children were kept in bilingual classes long after they acquired the necessary proficiency to be taught in English." In part because of this, 40 percent of the Hispanic children dropped out of high school. *Governing America,* (New York: Simon and Schuster, 1981), p. 313. See also the criticisms of bilingual (including black English) teaching in Richard Rodriguez, *Hunger of Memory,* (Boston: David R. Godine, 1981), pp. 34–35.

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rung of the ladder, welfare programs discourage him from trying to climb the ladder. The incentive effects of these programs reduce mobility in ways that are both direct and indirect.

It suffices here to refer to the striking changes in family structure that have occurred and are occurring, especially among the disadvantaged and most especially among disadvantaged blacks: the tripling of the number of unmarried couples in the past decade; the increase of 50 percent in the number of births by unwed mothers in those years; the increase in female-headed households from about 10 percent of all in the early 1960s to about 15 percent now (among blacks from about 23 percent to about 41 percent). George Gilder is doubtlessly guilty of rhetorical extravagance in attributing these changes to the growth of the welfare rolls.[14] Other forces have also been at work. But no one doubts that the poor, like other people, respond to incentives or that the tendency of welfare incentives is to make it easier to evade family and other responsibilities. That the great majority of welfare recipients are old, disabled, or children, and that no one becomes old, disabled, or a child in order to get welfare payments, is of course true. There is no denying, however, that welfare has contributed significantly to these changes. For many years a mother was ineligible for Aid to Families with Dependent Children if there was a man in the house, and even now in about half the states only single mothers may receive AFDC and Medicaid. These rules account in large part for the increase in the female-headed households.[15] And Martin Kilson is right when he writes that, regardless of race, female-headed households display an "incapacity to foster social mobility comparable to husband-wife and male-headed families."[16]

Facing Political Reality

No one can suppose that the barriers and disincentives government has placed in the way of mobility on the part of the disadvantaged will be removed or even lowered. The Urban Enterprise Zone proposal is illustrative of the general situation. The President is said to have thought reduction in the minimum wage and relaxation of certain safety regulations should be key elements of the plan, but he

[14]George Gilder, *Wealth and Poverty* (New York: Basic Books, 1981), p. 12.

[15]For evidence that welfare assistance influences female family headship rates, see Marjorie Honig, "AFDC Income, Recipient Rates, and Family Dissolution," *Journal of Human Resources* IX, no.3: 303–322.

[16]Martin Kilson, "Black Social Classes and Intergenerational Poverty," *Public Interest* 64 (Summer 1981): 61

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found that features of that sort would kill any chance that the plan might have in Congress. The political reality became evident when the bill sponsored by Representatives Jack Kemp (R-N.Y.) and Robert Garcia (D-N.Y.) was introduced. "[D]espite any false rumors to the contrary," Representative Garcia said then,

> the Enterprise Zone bill does not create a sub-minimum wage, eliminate the OSHA or other vitally needed government bodies, nor in any way reduce the presence in the inner cities of health or safety programs. I have devoted my entire legislative life in Washington to putting those laws on the books and I would never participate in their dismantling.[17]

As with the minimum wage, so with the other barriers listed above. Each has interest groups that will fight for it. Organized labor will not permit the relaxation of health and safety laws, however unreasonable. The building trades, in concert with the manufacturers of building materials, will not stand for any tampering with housing and building codes: The more extravagant the standard, the more material to sell and the more to install. Changes in immigration laws and regulations to reduce the number of unskilled immigrants are about as likely to be approved by the powerful Hispanic organizations as changes in the schools (easy procedures for dismissal of incompetent teachers, for example) by the organized teachers.

Beyond the opposition of special interests there lies another obstacle to the elimination of the barriers and the removal of the disincentives. This is the view – taken for granted by the college-educated middle class – that these measures benefit "the poor." No doubt self-interest supports this view: The minimum wage, for example, benefits skilled workers, and a policy favoring unskilled immigrants benefits skilled workers, among others. It seems safe to say, however, that it is mainly out of concern for the less well off that middle-class opinion supports the minimum wage, the immigration policy, and the other obstacles to upward mobility.

Since the Second World War the process of "middle-classification" has gone on at a rapid and accelerating rate. (In 1980, 16 percent of persons aged 25 or over had graduated from a four-year college, double the percentage of 1960; in 1980 nearly 40 percent of families had incomes of $25,000 or more, twice as many [in 1980 dollars] as in 1960.) For the same reasons that effective demand for wine, gour-

[17]*Congressional Record*, June 3, 1981, p. E2714. This year Representative Kemp said he would oppose the administration if there were a minimum wage waiver because it might "turn off the whole coalition that we have put together – liberals, Northeastern Democrats, civil rights groups and conservatives." *New York Times*, January 30, 1982, p. 19.

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met foods, and opera has increased, the demand for "alleviation of social injustices" has also increased. Although the rate of change may be slower, there is good reason to expect that in the next several decades the proportion of the population having the tastes and standards of the middle and upper-middle classes will continue to increase.

One must expect, then, that the old barriers, instead of being torn down, will be built higher, and that new ones will be added. Consider, for example, the findings of a recent study by the New York State Industrial Commission of working conditions in the garment manufacturing industry.[18] It has always been easy, the report says, for contractors to set up shop if they could find employees willing to work for less than a lawful wage; increasingly, such workers have become available in New York City.

> Just as in the early 1900s they are poor immigrant women. Often undocumented, unassimilated and equipped with only general skills, they work for whatever is paid, in the shops and in their homes. While learning specialized skills they work long hours to increase their earnings. Payment at the piece rate makes the situation attractive to noncomplying employers who ignore hourly minimum wage requirements.

That the women are learning specialized skills, that it may be impossible for some to work away from home, and that they evidently deem low pay better than no pay – these considerations apparently count for nothing with the commissioner, who has proposed new regulations for the industry, violation of some of which would carry criminal penalties.

As this example suggests, the middle-class reformer tends to see as "exploitation" what to the disadvantaged worker is "opportunity." He is likely, too, to find it hard to bring himself to make some sacrifice of a principle or symbolic value for the sake of some concrete return. Dean Derrick A. Bell, Jr., a civil rights activist, points to a bias of this sort on the part of civil rights organizations. These, he writes, are

> supported by middle class blacks and whites who believe fervently in integration. At their socioeconomic level, integration has worked well, and they are certain that once whites and blacks at lower economic levels are successfully mixed in the schools, integration also will work well at those levels. Many of these supporters either reject or fail to understand suggestions that alternatives to integrated schools should be considered, particularly in majority-black districts. They will be understandably reluctant to provide financial support for policies which they think unsound, possibly illegal, and certainly disquieting.[19]

[18]*New York Times*, March 14, 1982, p. 51.

[19]Derrick A. Bell, Jr., *Yale Law Journal*, 1976.

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A Larger Class of Disadvantaged

I have contended that the disadvantaged are in large measure a by-product of the continuing "middle-classification" of American society. Those who have climbed the ladder have, most often with kindly intentions, knocked out its lowest rungs, thereby making it difficult or impossible for those following them to get a foothold by which to rise. Also, especially in the last two decades, government has provided a set of welfare programs intended to relieve the distresses of the poor but having the effect of inducing many people to discard traditional values emphasizing work, self-sufficiency, and responsibility and to accept a life of dependence for themselves and their children. As the size and affluence of the advantaged increase, it is to be expected that the society will invest more heavily in efforts to reduce real and imagined injustices and that the outcome of these efforts will be a larger and less mobile class of the disadvantaged. It would not be surprising if in another two or three decades a considerable part of the whole population, perhaps as much as 10 or 20 percent, were to be in the society but not of it: unskilled and unschooled, unable or unwilling to work, accepting as a matter of right a level of material living – perhaps about half the median in the society – far higher than most people enjoyed a generation or two ago.

From an economic standpoint this outcome will present no great problem. Even if real income grows slowly, the compounding effect will enable the society to provide for many more dependents without taking for the purpose a larger share of GNP. Indeed, in the super-affluent society most people will have to work less if they are not to be buried under an avalanche of consumer goods.

Even at present the problem that the disadvantaged represent is not essentially an economic one. To be sure, there may be unfairness in taking from some in order to give to others, but the unfairness is not less when, as is mostly the case, the recipients are rich rather than poor. The real problem is the exclusion of the disadvantaged from a life that is truly human – from one that, as Aristotle taught, can be made so only by participation in the moral life of a community. It is one thing for persons who have been introduced, however imperfectly, to the elements of civilization to live without working or even at the expense of others. It is quite a different thing for those to live this way who (to quote Downs one last time) "never have the conventions of civilized life instilled in their minds and behavior."[20]

[20]Downs, p. 112.

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In this latter case, life must be at a less than fully human level no matter how adequate the supply of consumer goods. What fate could be worse?

From the standpoint of the society, the presence of a large class of the permanently disadvantaged will constitute a serious political problem. As the gap between the disadvantaged and the rest of the society widens, more and more of the disadvantaged will drop into the lower class. Insofar as it tries to protect itself against the violence and irresponsibility of this class, the society will have to adopt measures which it finds obnoxious. A city, for example, must infringe upon the rights of its citizens if it is to prevent a few "problem families" from destroying good neighborhoods. It must infringe upon them still further if it is to drastically reduce street crime. If it chooses to put up with these aggressions, it thereby invites further aggressions. Either way it loses.

As "middle-classification" proceeds, the goodness of the society– "compassion" is the cant word – increases. The public has more inclination (as well as more means) to be kind, generous, forgiving, and so on. It is more generous to the truly needy and, perforce, to the much larger number of those who are not truly needy but who pretend to be in order to avoid work or to gain some other benefit. But goodness, admirable as it is in private affairs, may be disastrous in public ones. What is required for the protection and good order of a public is not goodness but virtue. This is the quality of the statesman, and it often necessitates actions that are harsh or even cruel. American opinion, it is to be feared, will more and more insist upon the rule of goodness, for it is in the nature of goodness not to recognize its limitations. Carried too far, the rule of goodness will produce consequences which threaten the welfare – and the goodness – of the society.

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COMMENT ON BANFIELD'S "ZONING OF ENTERPRISE"

Claude E. Barfield

Professor Banfield posits two themes in his paper. The first is that the upward mobility of the disadvantaged has been hampered by the very laws and regulations created to aid them. The second is that the increasing "middle classification" of American society (i.e., the widespread acceptance of modern liberal values) has produced a heightened sensitivity to social injustice, but at the same time has rendered society less capable of meaningfully coping with the root causes of social problems.

The second theme, which I shall take up first, is in reality more asserted than proved with supporting evidence. Indeed, the recent history of the United States would seem to prove just the opposite of Banfield's thesis. At all levels of government – local, state, and federal – the middle class in the United States over the past decade has participated in, and provided great support for, a conservative reaction against key elements of the liberal reform tradition. Starting in the mid-1970s, the middle class showed strong support for local and state tax revolts – Proposition 13 in California and Proposition 2½ in Massachusetts being the most famous examples. At the national level, we have it on the authority of that enthusiastic chronicler of liberal and Democratic party history, Arthur Schlesinger, that the Carter administration represented the most conservative Democratic administration since that of Grover Cleveland. Despite this swing to the right, the Carter administration still went down to the conservative onslaught of the Reagan candidacy, and was abandoned by much of the middle class.

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Finally, whatever the ultimate outcome and verdict on the Reagan administration, it certainly will be counted as the most conservative presidency since the New Deal and possibly of this century. With support from the middle class, President Reagan has dramatically reduced the rate of growth of social programs, increased defense expenditures substantially, and eliminated or rendered less stringent numerous economic, social, and environmental regulations.

Rather than increased middle-class sensitivities, I would suggest another explanation for the greater difficulty attendant to coping with social and economic issues: the explosion of special-interest groups and their deep entrenchment in the American political process. Banfield, though he does not explore its implications, takes note of this phenomenon when he acknowledges the role of labor in opposing changes in minimum wage legislation and opposition of Hispanics to major revisions in the immigration laws.

Any examination of the history of attempts by the Congress to deal with the two most pressing social issues of the 1970s – welfare reform and health care – will reveal the key role played by particular special-interest groups (from doctors to welfare rights organizations) which, with their links both to the relevant congressional subcommittees and to supportive elements of the federal bureaucracy, have formed immovable and implacable barriers to major reform. Moreover, awareness and criticism of the deleterious role of special interest groups is not confined to conservatives – the most cogent recent analysis of their overwhelming presence has come from former Secretary of Health, Education and Welfare Joseph Califano, who has stated:

> Political party discipline has become shattered by the rise of special-interest politics in the nation's capital. Washington has become a city of political molecules, with fragmentation of power, and often authority and responsibility, among increasingly narrow, "what's in it for me" interest groups, and their responsive counterparts in the executive and legislative branches. . . This is a basic – and perhaps *the* basic – fact of political life in our nation's capital.[1]

The Reagan administration has a very sophisticated view and understanding of the role of interest-group politics in the creation and nurturing of federal programs. For this reason, its New Federalism proposal has a decidedly political goal: to force political decision making down to state and local levels, and to force special-interest groups to operate on these levels rather than at the federal level. Its aim is to break apart the Washington connection between

[1]Remarks of Joseph A. Califano, Jr., before the Economic Club of Chicago, April 1978.

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special-interest groups, congressional subcommittees, and executive agency bureaucrats. As President Reagan told a group of House Republicans last year:

> It's far easier for [interest groups] to come to Washington to get their social programs. It would be a hell of a lot tougher if we diffuse them, and send them out to the states. All their friends and connections are in Washington.[2]

Enterprise Zones

Banfield deals with enterprise zones in the context of his first theme, that often the disadvantaged are undercut by the very programs designed to aid them. In Banfield's view, the administration's Enterprise Zone proposal is at best irrelevant and at worst quite harmful. Potentially, the proposal is quite harmful, states Banfield, because it may well produce angry disappointment and large social costs when it fails to live up to the inflated expectations its proponents claim.

In Banfield's view, enterprise zones are poor substitutes for more fundamental and more important social and economic reforms. He therefore sets forth his own agenda for removing or reducing the barriers that currently limit economic opportunities for the disadvantaged. These include: repeal of minimum wage laws; removing licensing impediments; repeal of unreasonable standards for "conditions of work"; tightening immigration laws; revision of public housing regulations; education vouchers and an end to busing; and wholesale reform of the welfare system.

From the viewpoint of conservatives (whom he is largely addressing) Banfield's criticisms are well taken. However, a balanced assessment (again from the view of conservatives) would have to recognize that the enterprise zone concept does not contain several of the most egregious faults of earlier liberal urban programs. In the first place, it does not require a large federal bureaucracy to administer the program. Further, the dimensions of the federal client-state are not added to – the administration has vowed explicitly not to subsidize or support the community and neighborhood groups that will form the backbone of the program locally. Second, there is to be no direct federal appropriation. Use of the tax code (which will make the program self-executing) will greatly lessen the opportunity for federal bureaucrats to intervene and dictate enterprise zone rules and regulations (as they have with HUD's Community Development Block Grants).

[2]Quoted in Steven V. Roberts, "Budget Ax Becomes a Tool for Social Change," *New York Times*, June 21, 1981.

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Role of Government

Banfield's paper and most of the papers at this conference are replete with examples of misguided government policies and programs that often had unintended negative consequences. As such, they form an interesting complement to themes developed by the Reagan administration, which is launched on a crusade to reduce government at all levels and to shift responsibility for many federal programs to state and local governments. Both the papers and the administration's philosophy and actions are quite explicit about what the government should *not* do. What is lacking in all of this is a well-crafted rationale for what government *should* do. What is the proper role and responsibility of the public sector in the political climate of the 1980s?

Banfield's list of what he considers failed and even harmful federal laws and regulations represents a sweeping indictment of much of the social and economic legislation since the New Deal. Yet he offers no clear view of what specific changes he would substitute for past failures. For instance, what are the alternatives to the present welfare system; how does one fashion a health care system that fosters competition and satisfies consumer interests; what are the most efficient and cost-effective methods of regulating the environment; and which health and safety regulations regarding "conditions of work" should be dispensed with, which modified, and which kept in place?

Similarly, the Reagan administration's New Federalism programs present the same challenge: What are the possible frames of reference and criteria for defining the appropriate role of the federal, state, and local governments? Over the past year, the President has repeatedly pledged to maintain the "social safety net," but there is still no precise definition of the term or catalogue of programs encompassed by it. In seeking to federalize Medicaid and to turn over AFDC and the food stamp program to the states, as part of a federalism swap, has the administration concluded that medical assistance to the poor is part of the "social safety net" and income assistance is not? If so, what is the line of reasoning? The President's bold New Federalism proposal contains within it numerous such questions that will require careful examination if the nation is to achieve a more rational and orderly federal structure.[3]

[3]For a fuller discussion of the New Federalism and suggestions for reordering federal, state, and local responsibilities, see Claude E. Barfield, *Rethinking Federalism: Block Grants and Federal, State, and Local Responsibilities* (Washington, D.C.: American Enterprise Institute, 1981).

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THE ZONING OF ENTERPRISE: A COMMENT

Jennifer Roback

Banfield presents two major theses which are crucial to understanding the dynamics of urban problems. The first is that restrictive or protective laws hamper the efforts of disadvantaged persons to better themselves. The second is that as incomes rise, people become more interested in helping and more willing to help people poorer than themselves. I believe that both of these ideas are sound. Professor Banfield has done a great service by calling our attention systematically to these two areas. (As an economist, I am especially gratified to see a non-economist arguing the first point as strongly as Banfield does.) However, I believe that both of his points can be argued more carefully and persuasively.

Banfield offers a list of seven specific areas in which the law hinders or discourages the efforts of the disadvantaged. This list provides a powerful overview of backfired social legislation. Some of the items such as the minimum wage are well known inhibitors of economic advance. Others are not as widely known or as well documented. The discussion of housing controls and public housing programs, for example, is suggestive and intriguing, but unevenly documented. Both "rent control laws which reduce investment in the maintenance of housing" and "urban renewal . . . which displace[s] low-income people" are phenomena well known to economists. On the other hand "zoning laws which tend to prevent housing from being passed on to the poor" and " 'tenant protection' laws which . . . precipitate the rapid decline of good neighborhoods" are very plausible points but not so widely researched. References here would have been useful so the general audience could find out more about these issues.

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A more important weakness in this discussion of laws which hinder upward mobility is the treatment of immigration policy. The author's point is somewhat unclear here. Banfield does not explicitly tell us how immigration policy constitutes a barrier to mobility or why he believes immigration to be a problem for urban areas. I will address two possible interpretations of his discussion.

Banfield may be arguing that the increase in immigration is unwise because the immigrants will add to the already swollen pool of the urban disadvantaged. This interpretation is suggested by his definition of disadvantaged earlier in the article as including those whose English is poor or who are subject to discrimination. If this is indeed Banfield's concern, he may take comfort from the work of Barry Chiswick. Chiswick shows that the earnings of immigrants surpass the earnings of comparable native-born Americans within 10 to 15 years after migration. This pattern holds for all national origins he studied, including Cubans and Mexicans.[1] Thus, immigrants may indeed be "disadvantaged" as Banfield uses the term, but on the average they are certainly not "lower class" in their values and aspirations. They don't even seem to long remain poor relative to their native-born counterparts.

A second interpretation of Banfield's argument is that an inflow of unskilled workers will depress the wages of native-born American unskilled workers. This line of argument is correct only in the short run. An increase in the supply of unskilled labor will decrease the wages of directly competing labor and increase the return to complementary factors of production such as skilled labor and capital. This is correctly pointed out in Banfield's 10th footnote. However, the long-run effects of immigration will at least partially offset the fall in unskilled wages. The increase in population will increase the demand for consumer goods and hence for all types of labor. This increased demand for labor tends to offset the fall in unskilled wages. To the extent that unskilled wages do fall, the prices of consumer goods should fall.[2] This benefits all consumers, including the disadvantaged and the poor. Finally, immigration induces economic growth,[3] which again benefits the disadvantaged.

[1]Barry Chiswick, "The Effect of Americanization on the Earnings of Foreign Born Men," *Journal of Political Economy* 86 (October 1978):897–922.

[2]Jennifer Roback, "Immigration Policy: A New Approach," Cato Institute *Policy Analysis*, October 1981.

[3]Julian Simon, "The Really Important Effects of Immigrants Upon Natives' Incomes," in Barry Chiswick, ed., *The Gateway: U.S. Immigration Issues and Policies* (Washington, D.C.: American Enterprise Institute, 1981).

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Even without the beneficial side effects of immigration, it would be difficult to argue that restricting immigration is equivalent to removing a barrier to mobility. Redefining a relevant geographic area illustrates the semantic confusion. If the District of Columbia tried to restrict immigration to protect the wages of current residents, then people who wished to better themselves by seeking work in this high-income area would be excluded by the accident of their birth. Some current residents of the District would benefit at the expense of other current residents and at the expense of the potential migrants. Restricting the geographical movement of people is in fact nothing other than a barrier to entry into certain markets for certain people.

We should also remember that any increase in the labor force will have the same kind of economic effects as an increase in immigration. The baby boom and the increased labor force participation of married women are two of the most outstanding features of the postwar demographic landscape. Surely Banfield would not propose restricting the labor force participation of women to protect the wages of competing labor.

Finally, Banfield's statement that present policy tends to favor the unskilled is not correct. The quotation he offers as evidence is not an evidentiary statement, but a theoretical statement: "A cohort of unskilled immigrants depresses the earnings of low-skilled American workers but raises the earnings of high-skilled workers and the owners of capital." In fact, the official policy toward immigration aims at the reunification of families, without regard to skill. Migrants without families must demonstrate to the satisfaction of the Secretary of Labor that they will not "take a job away from an American."[4] Unofficial or illegal immigration is of course a different problem. It is inherently more difficult to assess the characteristics of illegal migrants. One has the impression that they are concentrated in the agricultural sector, where they probably do not create urban problems.

Banfield's second thesis is that alleviating social problems is a luxury good in that people demand increasingly more "social justice" as their incomes rise, or in Banfield's terminology, as they become more middle-class. This idea is essentially sound. A society which is struggling for subsistence literally cannot afford to support even its handicapped or elderly members, much less a pool of able-bodied unemployed adults. However, the dynamics of political support for any particular measure is far more complex than the brief discussion in the article suggests. Banfield undoubtedly did not intend his remarks

[4]U.S. Congress, Senate Judiciary Committee, *U.S. Immigration Law and Policy 1952-1979*, May 1979, pp. 86–93.

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to be the final word on this important subject, so I will take the liberty of trying to show where his ideas can be expanded or where further research efforts should be directed.

Banfield argues that the middle class supports social reform because they believe these measures benefit "the poor." No doubt many people do sincerely hold these views. The puzzle for social scientists is why the middle class has these beliefs. Most of the reforms in fact are destructive to the disadvantaged and hinder upward economic mobility, as Banfield so strongly argues. One might think that if the middle class were willing to spend some of their income to help the poor, then they might also be willing to spend some income on discovering what measures actually will be helpful to the poor. Why the liberal middle class has consistently supported demonstrably counterproductive programs like the minimum wage is an issue deserving further attention.

A more complicated problem is that the middle class is not a homogeneous group of people. The National Taxpayers Union is largely a middle-class group, and yet they would not support income redistribution and other modern liberal reform measures. The term "middle class" is probably too broad to be useful in understanding political pressure for helping the poor. Banfield offers examples of groups which support the restrictive legislation whose stated aim is helping the poor. Most of these examples are of interested persons, not the abstract, disinterested middle class. The middle class may go along with reform, but they are probably not the driving force. Thus, the relation between increasing "middle-classification" and increasing pressure for "social justice" is not strightforward.

Banfield seems to suggest that the middle class supports the present immigration policy. This is not uniformly true. Many groups most actively supporting restrictivist immigration policies are middle or upper-middle class. Trade unions, the Ku Klux Klan,[5] and Zero Population Growth[6] all favor tighter immigration controls. Each of these diverse organizations holds its position for a very particular reason, only tangentially related to helping the poor. And the members of each of these groups are primarily middle-class.

In fact, even predicting a person's political views based on membership in a much more narrowly defined group can be a tricky task. Banfield says that Hispanic groups favor more open immigration

[5]J. Huston McCulloch, "Immigration Barriers," Cato Institute *Policy Report*, February 1980.

[6]Neal R. Peirce and Roger Fillon, "Should the U.S. Open its Doors to the Foreigners Waiting to Come In?," *National Journal*, March 7, 1981, pp. 390–393.

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policies. Yet Cesar Chavez has favored a crackdown on illegal immigration.[7] His role as an organizer of current U.S. residents outweighs his allegiance to Mexican nationals. Many Hispanic leaders also favor the very restrictions Banfield mentions,[8] as his quote from Representative Garcia suggests. Their role as reformers dominates their allegiance to their impoverished constituency. Thus, interest-group politics is far more complex than Banfield's provocative discussion suggests.

Throughout the article, Banfield notes the importance of people's attitudes and values in shaping society. This is an important point, one economists would do well to take more seriously. But Banfield displays ambivalence on the important question of how those values and attitudes evolve in a society. On one hand, he seems to think that people are destined to hold certain values. His discussion of the "middle-classification" of society suggests that attitudes toward alleviating social injustice change with rising income just as surely as tax brackets change. On the other hand, much of the paper is devoted to discussing incentives for particular conduct. If we believed that some individuals were stuck with lower-class values, removing barriers to economic advance would be an exercise in futility.

Banfield seems to believe that incentives can nurture certain values and attitudes. The conclusion he draws from the IBM incident is that people need to work in environments which are appropriate to their own values, not necessarily the values of the middle class. A further conclusion is that if people have the opportunity to work at jobs they regard as appropriate, then their attitudes or their children's attitudes may change. The removal of political barriers to economic improvement may help people to remove their own psychological barriers. Banfield has done us a service by drawing from the ideas of economics, sociology, and politics to aid our understanding of the problems of the urban poor.

[7]McCulloch, p.1.
[8]Peirce and Fillon, p. 391.

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THE RATIONALE FOR ENTERPRISE ZONES

Peter J. Ferrara

Federal, state and local governments have spent literally hundreds of billions of dollars in the past two decades to solve the nation's urban problems. Yet these problems are now far worse than when these efforts began. It is merely to state the obvious to say that these efforts, taken collectively, have not been successful in achieving their broadest goal of urban revitalization.

In the past few years, support has been building for an entirely new approach towards solving these problems – enterprise zones. The Reagan administration has now proposed the establishment of an Enterprise Zone program at the national level, which Congress is currently considering. This paper will examine the rationale for the program.

The Enterprise Zone Concept

The basic concept behind enterprise zones is to create an open, free-market environment in the nation's depressed inner cities and rural towns through the removal of taxes, regulations, and other government burdens on economic activity. The creation of this environment and the removal of these burdens would then create and expand economic opportunity within the zone areas leading to the economic revitalization of these areas and to real, private-sector jobs for workers in or near those areas.

The model for enterprise zones is the free-trade zones established throughout the world, such as Hong Kong. Within these zones, gov-

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Since writing this piece, Mr. Ferrara has joined the White House staff as a senior staff member in the Office of Policy Development. In this paper he represents only his own views and not necessarily those of the administration.

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ernment intervention into the private market economy has been kept to an absolute minimum. As a result, rapid and substantial growth has generally been stimulated, improving the standard of living for the population of these areas far beyond the population in the surrounding areas.

Enterprise zones are thus based on an entirely fresh paradigm of thought concerning economic growth and distressed areas. The old approach was based on two elements – subsidy and central planning. This involved taxing away part of the hard-earned income of workers and producers to give subsidies to others in need, maintaining or increasing their economic dependency. It also involved massively bureaucratic urban renewal projects and other central planning tools aimed at redirecting existing economic activity.

The new approach is instead based on market processes and the creation of new economic wealth. Instead of subsidies, it focuses on removing government barriers to economic growth, barriers which are preventing people from creating, producing, and earning their own wages and profits. The idea is to focus on what the government is doing that inhibits economic growth, that prevents people from achieving the kinds of things they want. And instead of central planning, the new approach seeks to create a general climate of open markets where entrepreneurs and economic activity can flourish, relying on market forces to determine the course of redevelopment within the zones.

It is important to emphasize that the concept is based on creating a process or climate – a free market – rather than on achieving particular results or goals. Thus, the concept does not involve an attempt to stimulate a specific kind of business – large or small, labor-intensive or capital-intensive, industrial or commercial, etc. Instead, it seeks to roll back government burdens across the board and let the market decide what activities should take place in the zones. This market-process orientation is based on the view that the establishment of a free market is the best means for achieving prosperity and full employment, and that the government is quite unlikely to be successful in aiming at particular, discrete results through any actions beyond this.

The enterprise zone concept builds on the recognition that there is a wealth of latent, underutilized talent and opportunity within the nation's economically depressed urban and rural areas. The idea is to lift the government-imposed "lid" off these areas and allow them to flower. Through the removal of government burdens and the reestablishment of natural incentives, the intent is to stimulate the creation of new businesses and jobs that would not have existed in the

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absence of the program and not to try to induce outside businesses to relocate in the zones. Therefore, the program is not an attempt to reverse current economic trends, but to give distressed areas the maximum flexibility to adapt to these trends through building on existing talents and opportunities within enterprise zones.

The enterprise zone concept involves not just removing taxes and regulations within the zone areas, but also attempting to solve problems and provide services through increased reliance on decentralized, voluntary, private, market institutions rather than highly centralized, bureaucratic, government institutions. An additional category of government barriers to economic growth is inadequate municipal services, which the government has monopolized and thereby foreclosed to alternative providers. Enterprise zones should, therefore, include privatization – relying on alternative, private-sector firms and institutions to provide these services where feasible. It should also involve utilization of private, local, neighborhood and community organizations to facilitate participation by zone residents in the economic development of the zone areas and to help deal with social problems in those areas.

The basic concept of enterprise zones indicates that in their pure form they should not involve any government appropriations or expenditures. Such appropriations were characteristic of the old approach of providing direct subsidies, rather than the new Enterprise Zone approach of removing government burdens.

The Rationale for Enterprise Zones

The rationale for enterprise zones is most fundamentally based on the view that economic growth can be sustained over the long run only by reliance on free markets and the private sector. Such growth cannot be sustained through centralized government regulations or subsidies. Therefore, the way to revive the depressed inner cities and rural towns of the nation is to reestablish reliance on private markets and institutions within these areas.

On a simple microeconomic level, the removal of government burdens would reduce the cost of doing business within the zones. The lack of economic activity within these areas now suggests that ultimately the cost of doing business there is greater than elsewhere in the nation. If the reduction of costs involved in the program is great enough, the cost of doing business within these areas would be brought down to national levels, making them economically viable again.

This analysis indicates that enterprise zones can be the solution to economic decay, even if the government burdens they remove are

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not the major cause of such decay. The resulting reduction of costs can still bring the cost of doing business down to viable levels, even if these costs were abnormally high for some other reason.

But it should also be noted that the mere fact that the same government burdens generally apply across the nation does not mean that those burdens are not the cause of economic distress within particular areas. It may simply be that the economic base of these particular areas is weaker than elsewhere and they cannot stand the weight of these burdens, while other areas can continue to prosper even under this weight.

One cannot discuss the rationale for enterprise zones without discussing the work of Dr. Stuart Butler who, with characteristic brilliance, has further refined this rationale. Butler in particular develops two broad arguments which suggest that the general free-market climate of the zones should be particularly effective in stimulating urban revitalization.[1]

The first point builds on the work of Professor David Birch of MIT.[2] Birch recently conducted the most comprehensive study of private-sector employment ever undertaken. This study examined employment over the period 1969-1976 at 5.6 million firms, representing 80 percent of all private-sector employment.

The clear conclusion of this study was that small firms of 20 employees or less were the primary job generators nationwide. These firms accounted for 66 percent of all net, new private-sector jobs across the country in the period under study. In the Northeast, these firms accounted for virtually all net, new private jobs.

Birch also found that the reason that some areas of the country were booming while others were declining was not relocation of existing businesses. Less than one percent of all the employment changes Birch found were due to such relocation. The study also found that the reason for these differences was not higher rates of business failure or contraction in depressed areas. The rate of job loss due to such failures or contractions was found to be relatively uniform across the country. It was in fact found to be higher in some of the most rapid growth cities, such as Houston.

Birch found instead that the reason for growth of some areas and the decline of others is that the birth rate of new firms and jobs was

[1]See Stuart M. Butler, *Enterprise Zones: Greenlining the Inner Cities* (New York: Universe Books, 1981), and idem, *Enterprise Zones: Pioneering the Inner City* (Washington, D.C.: Heritage Foundation, 1980).

[2]See David Birch, *The Job Generation Process*, M.I.T. Program on Neighborhood and Regional Change, 1979, pp. 19–20; idem, *Job Creation in Cities* (Cambridge, Mass.: MIT Press, 1980).

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so much greater in the growing areas than in the declining ones. The high birth rate of new jobs more than offset the loss of jobs in Houston, so that on net the city was growing, while the low birth rate in New York failed to offset its normal job loss, so on net the city was declining.

Butler deduces from these findings that the key to inner-city job creation is to establish an overall climate attractive to entrepreneurs able to start new small businesses – a climate suitable to risk-taking and experimentation. Butler argues that it is particularly difficult to stimulate such entrepreneurial activity through traditional, centralized, government aid programs, citing Birch in support:

> The job generating firm tends to be small. It tends to be dynamic, (or unstable, depending on your viewpoint) – the kind of firm that banks feel very uncomfortable about. It tends to be young. In short, the firms that can and do generate the most jobs are the ones most difficult to reach through conventional policy initiatives. . . . The very spirit that gives them their vitality and job generating powers is the same spirit that makes them unpromising partners for the development administrator.[3]

Butler concludes that open, free-market climates to be established by enterprise zones will be the most conducive to the establishment of new businesses by small entrepreneurs.

The second broad argument developed by Butler builds on the work of Jane Jacobs. In her seminal book, *The Death and Life of Great American Cities*,[4] Jacobs advanced the thesis that the key to strong and vibrant inner-city neighborhoods is diversity. The neighborhood must be used by different people for different purposes at different times – housing, shopping, working, playing, etc. – so that there will always be a significant public presence in the streets. This will deter crime and contribute to a vibrant community spirit. This in turn means that mixed-use activities must be allowed within each neighborhood. There also must be a mixture of old and new buildings, providing the posh settings suitable for large, established firms and the bargain opportunities suitable for small, new, struggling firms. There must be room and opportunity for the complex bonds that bind a community together – economic, social, religious, familial – to develop and grow.

Butler argues that many traditional urban revitalization efforts have been unsuccessful because they have failed to recognize – indeed they have contributed to the destruction of – the indigenous diversity

[3]Birch, *The Job Generation Process*, pp. 17, 20.
[4]See Jane Jacobs, *The Death and Life of Great American Cities* (New York: Random House, 1961).

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and community bonds necessary for viable inner-city neighborhoods. Large-scale construction projects, for example, have destroyed existing inner-city networks and replaced them with masses of individually unconnected residents or businesses unintegrated into the local economy. The free-market climate of enterprise zones, by contrast, should build upon existing inner-city networks and institutions, and indeed contribute to additional diversity. The removal of stultifying uniformity through zoning and unnecessary occupational licensure laws, for example, will aid the development of diversity in neighborhoods.

Yet it is not only because enterprise zones are likely to be successful in urban revitalization that they should be adopted. From a free-market perspective, it is also that they will accomplish this goal by a particular means – an *increase in economic liberty* that will contribute to the overall establishment of free markets.

Other important advantages of the program relate to political rather than substantive factors. The creation of islands of economic freedom in America's major central cities will hopefully serve as useful demonstrations of the success of free markets. This should lead to pressures for further economic liberalization nationwide. The deregulation, the tax reductions, the privatization involved in the Enterprise Zone program would then hopefully expand across the country.

Enterprise zones have already performed a great service as a pedagogical device. The broad discussion of the possible establishment of the federal program has already caused state and local officials to begin to reexamine their local policies, to begin to look at the burdens they place on economic activity, instead of just the subsidies they might provide. This advantage of the program is likely to become even more important in the future.

Moreover, for those who wish to advance the cause of economic liberty, the program can serve as a platform to appeal to political interest groups, which up until now have been hostile. Through enterprise zones, free-market partisans can show minority group members and inner-city residents that capitalism can work for them. This could change attitudes not only with regard to this program but to issues across the board. The progam can therefore be used as the basis for an appeal for general support from these groups for economic liberalization. For long-term success, free-market partisans need to make such appeals to all segments of the population.

Finally, it should be noted that simply not addressing the problem of inner-city deterioration and urban decay is not a viable political option. In the current political climate, there must be some program addressed to the needs of economically distressed areas. From a free-

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market perspective, it is far better to address this political need through enterprise zones than through typical grant programs.

Compared with these benefits, the cost of the Enterprise Zone program is relatively low. Since it is a no-appropriations program, it does not involve increased government expenditures. The tax-relief portion of the program may entail costs in terms of forgone revenue. But the other elements of the program—deregulation, improvements in local service through privatization, and involvement of private-sector neighborhood organizations—should not entail costs in any terms.

Even the cost of the tax relief is likely to be quite modest. Since enterprise zones are to be placed in economically depressed areas, there is little existing economic activity in potential zone sites. Consequently, revenue losses from the reduction of taxes on such activity would be small. If outside businesses moved into the zone, revenue losses from zone tax cuts would increase. As is discussed below, however, such relocation is likely to be insignificant. Entrepreneurs planning to start wholly new businesses or expand existing ones might choose to locate these facilities within a zone, though they would have gone ahead with them elsewhere in the absence of the program. But offsetting the revenue losses from such actions would be new tax revenue resulting from businesses and jobs that would not have been established, inside or outside of the zone, without the program. Such losses would also be offset by the employment of workers who would otherwise be unemployed, particularly those who would otherwise be receiving government aid.

Conceivably, these offsetting factors could outweigh the losses, making enterprise zones net revenue producers. In return for their tax cuts contributed to the zones, cities could reclaim revenues from the additional business activity generated by the incentives at the federal, state, and local levels. In the area of the property tax, for example, substantial improvement in the zone economy would improve property values throughout the zone, resulting in increased property tax revenues. Depending on how great any reduction in zone property tax rates is, it is easy to see that in many cases the end result would be increased property tax revenues on net. Whether this net revenue increase is beneficial depends on what actions the government takes in response to it.

Our theoretical analysis is supported by the U.S. Treasury's estimates of the federal revenue losses resulting from the Reagan administration's proposed Enterprise Zone program. The Treasury Department estimates that the losses would be $12.4 million per year per zone, and approximately $300 million for 25 zones. These estimates

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were based on the conservative assumptions that some new businesses would choose to locate in the zones which would have located elsewhere without the program, and that virtually no new activity would be stimulated that would not have occurred elsewhere. The estimates were for a tax package that would reduce federal business income taxation by 75 percent or more, eliminate all capital gain taxes, abate tariffs and import duties, and provide tax cuts for zone employees.

Criticisms

Despite this analysis of the costs and benefits, gnawing concerns over enterprise zones do exist from a free-market perspective. One of these is expressed in the often asked question: Why limit the free-market climate to be established by the program to the small zone areas; why not make the whole country into one big enterprise zone?

The answer from free-market advocates of enterprise zones is that they would like to establish the zone environment thoughout the nation, but that is politically impossible at the moment. A political opportunity exists to begin the process in certain depressed areas of the country, so why not seize it?

There is a reason for special urgency for economic liberalization in potential enterprise zone areas since these areas, as we have suggested, simply may not have a strong enough economic base to survive economically under the weight of government burdens, though other areas may still manage under such burdens. If enterprise zones would work in reviving economically depressed areas, would it make sense to delay this implementation and let these areas continue to suffer? To argue that the zone advantages should not be implemented until they could apply to all areas is like arguing that one should not prevent the torture of only one of two innocent victims unless he could also prevent the torture of the other.

A more substantial concern from a free-market perspective is the potential for relocation of business activity resulting from enterprise zones. As we have noted, it is unlikely that existing businesses would choose to relocate in the zone areas in response to the zone incentives. Existing businesses locate where they are for a reason, and they tend to be adapted to the clientele and opportunities of that location. Moreover, the costs of relocation are usually substantial. The business community has almost unanimously confirmed that such relocation is unlikely. Nevertheless, the potential for relocation exists. More likely is the possibility that some entrepreneurs considering the establishment of entirely new businesses, and some existing firms considering major expansion, would locate their new facil-

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ities in the zones, even though they would have gone ahead with these projects elsewhere in the absence of the program.

From a pure free-market perspective, relocation in either of these two senses is a negative. Such relocation means that the market process has been distorted, that businesses are not locating on the most efficient sites. This leads to an important conclusion – one cannot unequivocally state that from a free-market perspective enterprise zones are a good idea, as we can say, for example, that rent decontrol is a good idea. Support for enterprise zones by free-market adherents has to be based on a judgment that, on net, the advantages of the program outweigh the disadvantages.

It should be easy to see, however, that from the free-market view the program is on net clearly beneficial. This can best be seen by analogy. The likelihood of relocation due to enterprise zones is really not any greater than the likelihood of relocation due to President Reagan's general economic program. The nationwide tax cuts and deregulation are likely to stimulate some relocation of businesses from other countries to the United States. Such relocation will clearly distort the market process internationally, again causing businesses not to locate on the most efficient sites, and leading to a reduction of total wealth created worldwide. Should free-market advocates have argued against the tax cuts and deregulation until they could be implemented worldwide because of this resulting distortion and inefficiency? One might argue that since such relocation was entirely from outside the United States, from the U.S. perspective it is not a negative. But from the view of the objective public policy analyst committed to free markets, such relocation should be just as much of a problem as the relocation resulting from enterprise zones. One should not be confused by the fiction of political boundaries.

Or to take a cleaner example, consider the case of Rhode Island or the District of Columbia. Strong state and local tax cuts and deregulation within those states hold the same potential for relocation as enterprise zones. Should free-market adherents within or outside these jurisdictions oppose these policies until all states, or all countries, could be induced to implement them? Clearly not.

Finally, consider a remote possibility. After years of ingenious litigation, the Indians win a Supreme Court case giving them back the island of Manhattan. At the same time, the tribal council is attending a seminar co-sponsored by the Center for Libertarian Studies and the Institute for Humane Studies, and they are convinced by the old curmudgeon, Murray Rothbard, that an unfettered free market is the ideal system. They therefore eliminate virtually all taxes and regulations, completely privatize public services, and use volunteer com-

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munity action to care for the needy. Would this development be bad from a free-market perspective because of the potential for relocation onto the island? Clearly not.

A final concern is whether enterprise zones are the most efficient means for stimulating urban revitalization, or whether direct expenditure programs might be more controllable and efficient. The concern here is that the cost per new job created, in terms of forgone revenue under enterprise zones, may be greater than the cost per new job created in terms of dollars spent under direct expenditure programs.

There is no model that can tell us the cost per job created by enterprise zones, nor is there likely to be, and such estimates for other programs are generally spurious. Therefore, there is certainly no basis for such comparisons between the two types of programs at the present time.

Moreover, any such comparison would be much like comparing apples and oranges. First of all, enterprise zones hold the potential for creating jobs and income that would not have existed elsewhere in the absence of the program. Enterprise zones hold the potential for increasing the total wealth of the economy. The jobs and income produced by direct expenditure programs can be ascribed to relocation since the same dollar's worth of resources spent in one area of the economy is drawn out of another area through taxation.

The tax and regulatory reductions involved in enterprise zones merely allow businessmen to keep more of what they have produced and earned in the first place. In order to receive a "subsidy" provided through such relief, a business must first produce and earn income at least equal to the value of the subsidy. There is therefore no redistribution. Through direct expenditure programs, however, the production and earnings of some are taxed away and redistributed to the beneficiaries who have not produced or earned them through productive effort evaluated in the marketplace. Because of this key philosophical difference, the incentives provided through enterprise zones may be preferable to the subsidies provided through expenditure programs, even if the "cost per job" of the former is greater than the latter.

This feature of the enterprise zone incentives also implies greater efficiency in one sense than the subsidies provided through expenditure programs. Since in order to receive any benefit under enterprise zones a business must first produce and earn some income, there is a natural, decentralized market test for the program's subsidies. They will not go to firms that are not at least somewhat viable

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in the marketplace. Direct expenditure subsidies can, by contrast, go to firms that are completely without viability on their own.

Conclusion

More than government expenditures and subsidies, residents of economically depressed areas need opportunities. This is the focus of the Enterprise Zone program. The program will identify and remove government barriers to entrepreneurs, which can create jobs and economic growth. It will spark the latent talents and abilities already in existence in our nation's most depressed areas. This bold new concept deserves to be given a chance to work.

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THE ENTERPRISE ZONE AS A POLITICAL ANIMAL

Stuart M. Butler

Introduction

Recently, a libertarian journal published a hard-hitting, if predictable, broadside of ideological purity aimed at the enterprise zone concept. All the usual arguments were there. If economic freedom is so marvelous, why ration it to a few inner-city zones? Why should a firm in the South Bronx get a tax break that a firm in Dallas cannot receive? Creating a few fiefdoms where free enterprise rules, thundered the author, is about as moral as it would have been to combat slavery in the Old South by establishing a dozen slave-free cities. Moreover, he continued, the political process will ensure that the enterprise zones will be so weak and corrupt that they will not even work. So we will end up with an unsound test that will be written off as proof that free enterprise cannot operate in the inner cities.[1]

I relate the substance of this article because its criticism of the enterprise zone is based on two related assumptions regarding the nature of politics, with which I disagree. They are assumptions which distinguish orthodox libertarians from those one might call the conservative libertarians, among whom I include myself.

At the risk of oversimplification let me offer a definition of the second category. A conservative libertarian does not believe that a truly free society will result from some Götterdämmerung of government, in which the shackles of the state are finally thrown off, and that any compromise will only postpone the day of freedom. The

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Cato Journal, Vol. 2, No. 2 (Fall 1982). Copyright © Cato Institute. All rights reserved.
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[1]Jack Shafer, "Free Enterprise for the Favored," *Inquiry*, March 29, 1982.

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conservative libertarian would probably not differ too much in his vision of utopia, but he believes that freedom is a comparative situation, and that we may need to compromise, horse-trade, and sometimes travel by an indirect route to bring society closer to the final but unattainable goal.

The first assumption contained in the criticism of free enterprise zones is that it is better to wait for a complete victory on all fronts than to score a localized victory. Or to use the slavery analogy, better to await a general uprising or liberating army than to set some of the people free. But this overlooks the fact that localized freedom can act like a benign cancer. It can rot the foundations of the unfree state around it. It provides a demonstration effect to attract the envy of others. If we can create a small number of zones where genuine freedom operates to the clear benefit of the chosen few, you can be sure that others will soon clamor for the same treatment. Even in Communist China, competitors to Hong Kong are beginning to appear. The left in politics has used this demonstration effect to great advantage. Small programs grow large and government budgets soar because citizen B will always demand any special benefits received by citizen A. The enterprise zone is an attempt to use the same approach in the opposite direction: Create areas in the inner cities where individuals are provided with lower taxes and less regulation, and political pressure will build to spread freedom. As former leftist author Paul Johnson noted, the enterprise zone offers a chance to plant free enterprise deep in enemy territory, where it can corrupt from within. It is, he said like "a dagger aimed at the heart of socialism."[2]

One might ask those who question the morality of establishing localized free enterprise zones just what they would see us do with the islands of freedom that already exist. Should West Berlin be abandoned because East Germany is not free? Should the freedom of Hong Kong and Taiwan be curtailed because China is enslaved? Indeed, we might ask them if the creation of the United States, with its relatively free institutions, was a retrograde step. Should those of us who believe in a free society oppose small outbreaks of freedom until we can guarantee a completely free world?

The second assumption in the criticism of free enterprise zones carries more weight. Stated simply, it is that we will never get the chance to create limited demonstration areas, such as enterprise zones, because political forces will always conspire either to dilute them beyond recognition, or worse still, to use them as a vehicle for even greater government control or manipulation. My disagreement

[2]Speech by Paul Johnson, The Heritage Foundation, Washington, D.C., July 30, 1980.

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is that this is not inevitable. Statistically, the chances must be that the enterprise zone will indeed fail. If so, it will be, in part, because many proponents of freedom prefer to stand on the sidelines, discussing grand strategy, while the game is lost because of poor tactics and an understrength team. If it does fail, it will be a lost opportunity, no more and no less. It will be a disaster only if it becomes an excuse for more government control. That is the risk we run whenever we attempt to change the direction of society.

Foundations of the Approach

The enterprise zone is a classic conservative mechanism, combining an attempt to spread economic freedom through a demonstration effect with a device designed to alter the entire thrust of urban policy. The question to be addressed, in light of the second assumption discussed above, is whether it is doomed to failure because of the realities of politics.

In its view of inner-city America, the enterprise zone concept marks a bold departure from the orthodox approach of recent decades. The assumption behind urban renewal, model cities, UDAG, and all the other programs thrown at depressed neighborhoods is that these areas are devoid of potential for development, but that it should be a goal of national policy to provide them with a life support system financed by taxing the rest of the country. A modified version of this traditional approach is that the inner cities should become the stage for a reversal of history – places where public money is used to lure back the major corporations that for years have been leaving large cities for more profitable locations.

The enterprise zone approach is quite different in its view of the inner city. In the first place, it does not constitute an attempt to freeze or reverse change. Cities have been undergoing continuous evolution in response to social and economic developments, and it would be folly to try to interfere with these broad movements. The industrial base of cities, in particular, has been influenced by the increasing attractiveness of non-urban sites. The proper response is not to place obstacles in the path of these changes, but to encourage adaption and innovation within cities so that a new generation of economic activity might arise. The enterprise zone mechanism would assist in this process by removing man-made barriers to creativity. But it has to be admitted, of course, that some cities will and should continue to decline because they have no capacity for adaption. In those cases, an enterprise zone would do nothing to halt the demise.

The second foundation of the enterprise zone concept is the belief that in even the most depressed areas of our cities there is consid-

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erable potential for indigenous economic improvement. There is usually sufficient infrastructure to support a significant increase in activity, and there is generally no shortage of underemployed land and labor. Entrepreneurship may be misdirected, but it exists. And capital is not so much in short supply as misallocated or consumed. The reason for this state of affairs is that government has tried to constrain and plan the development of major cities. In so doing it has stifled creativity with regulations and a perverse tax system, and created a state of dependency among inner-city residents.

The assumption behind the enterprise zone is that by dismantling as many barriers as possible within these neighborhoods, factors of production that now lie dormant might come to life. There is no guarantee that development would occur – if an area really were devoid of all potential then it would continue to decline. But if local activity is merely suppressed by government, the enterprise zone could bring about economic improvement. Moreover, it would be a net addition to the national economy, not a reallocation of resources, if the increased business activity did not result from relocation or branching by firms located in non-zone areas. If the zones are placed in highly blighted neighborhoods, it is likely that relocation will not be significant. Data on location decisions by firms suggest that tax and regulatory obstacles are not the reason they avoid places like the South Bronx. But for the struggling first-time businessman who lives in the area, these obstacles can be the difference between success and failure.

New, indigenous growth in inner-city enterprise zones is thus central to the concept. But it must be remembered that the enterprise zone concept is not merely a vehicle to facilitate economic freedom in the cities. It has a political dimension that is important not merely to the local success of the zones, but also to their ability to resist erosion by external political forces.

A successful enterprise zone would, in effect, create a frontier community in the heart of a major city. By reducing red tape and government activity, the zones would encourage the growth of neighborhood associations and creative partnerships between these groups and local businesses. In frontier communities, free associations were formed to deal with all manner of problems and opportunities touching on the economic interests of residents. The remoteness of Washington allowed these communities to develop successful institutions and approaches to problems without outside interference from "experts." In the inner cities we find a similar distrust of outsiders, and there exist many fiercely independent neighborhood associations formed to tackle local problems. In the South Bronx, for exam-

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ple, some groups are engaged in housing rehabilitation and homesteading, others are trying to fight crime, and still others are trying to improve attitudes to education. Invariably these organizations use unorthodox methods that are frowned upon by City Hall, and they spend much of their time struggling with the bureaucracy. By reducing government controls, such as occupational licensing and zoning, the enterprise zone would strengthen these groups. In so doing, it would also strengthen the political forces in whose interests it would be to maintain the independence of the neighborhood.

Criteria for Political Success

For the enterprise zone to achieve its objective of planting robust seeds of freedom that will spread outwards, the mechanism used to create it must: facilitate entrepreneurship, involve no cash payments, concentrate tax reductions in small firms, and create an effective political coalition.

Facilitating Entrepreneurs

Independent, unorthodox neighborhood organizations are the social entrepreneurs who parallel the business entrepreneur. The preconditions for successful entrepreneurship appear to be the same for each species. In the first place, there must be a negative factor – what Albert Shapero has described as "some dislodgment from a comfortable or otherwise acceptable state of being . . . ."[3] Crisis breeds entrepreneurs. As Johnson said, nothing concentrates the mind so wonderfully as the prospect of being hanged in the morning. In inner-city neighborhoods, the decline of traditional industries and mounting unemployment, combined with cutbacks in many government programs, have already helped to create this necessary condition.

The positive factor in successful entrepreneurship is the ease with which innovative activities can be conducted. In reality this is also a negative factor—the absence of barriers or obstacles. New neighborhood organizations, like new business ventures, find invariably that their biggest headache is local licensing, zoning, and other regulations that restrict creativity and increase costs. This is much more threatening than either federal rules or the problem of acquiring start-up cash. So the enterprise zone must contain the means to reduce these barriers. If it can also encourage a modest flow of investment into new businesses, so much the better.

[3]Albert Shapero, "The Role of Entrepreneurship in Economic Development at the Less-Than-National Level" (unpublished paper, Academic Faculty of Management Sciences, Ohio State University, 1979).

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Absence of Cash

To be successful, the enterprise zone must involve no cash support either to businesses or to community-based organizations. We have plenty of experience to teach us that once a source of funds is made available, it seems to breed people who find ways of absorbing it and then conducting successful campaigns for more funds. Not only that, the businesses and organizations created to utilize this money become the advocates of regulations and other barriers to freeze out weaker competitors–and that usually means new and innovative alternatives.

Targeted Tax Incentives

If substantial tax relief accompanied the establishment of an enterprise zone, some objections to the concept would have greater validity. The tax relief might lead to considerable reallocation of economic activity, for the benefit of some areas, and it might tend to help existing, large corporations rather than new entrants. If this caused other places to clamor for equal treatment, it would still serve a valuable purpose, of course; but if the enterprise zones can be justified only on the basis of their contribution to the national economy, they would be harder to accept. Moreover, if the zones are to fulfill their role as a clear demonstration to poor inner-city residents that free markets offer them a real opportunity to create businesses and climb the economic ladder, in contrast to the stifling climate of the welfare state, then the emphasis of the zones must be on the small entrepreneur. So it would be preferable, from many points of view, to implement tax reductions that favor the new, small firm rather than reducing general business taxes.

Virtually all firms pay social security and various state payroll taxes, and for small, labor-intensive companies these can be onerous. Small, new firms, however, generally show little or no taxable profit in their early years. Hence, employment and investment tax credits used against business income taxes are of only limited value to these firms, while enhancing the growth of large, profitable companies. Allowing such credits to be taken against payroll taxes, and reducing payroll taxes directly, would remove a heavy burden from struggling new firms and allow them to compete more successfully with established firms.

New companies could be helped in another way. Major firms can offer numerous shelters and other relief to investors and hence attract capital. Small firms – with the possible exception of those engaged in real estate operations – have a far more restricted range of incentives they can offer investors to offset the higher risks associated with new businesses. Providing incentives for investors in small firms

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would offset the bias in the tax code which favors real estate and investments in large firms, and hence stimulate the flow of capital to the new entrepreneur.

Creating a Coalition

It is a hard political fact that a majority in Congress is necessary to pass a law – even if the law is intended to reduce the role of government. This requires a mechanism which strikes a delicate balance between satisfying the special interest groups necessary for passage, and creating a vehicle which can be dominated and corrupted by those same interest groups. Obviously, this is not an easy task to accomplish – it requires both political judgment and luck.

British and American Models Compared

It is interesting to examine the way in which the enterprise zone has developed on both sides of the Atlantic from the perspectives of these requirements for success. The history of enterprise zones in Britain has provided critics of the whole approach with plenty of ammunition – but it has also provided proponents with some valuable lessons. Libertarians will no doubt feel their suspicions confirmed to learn that the basic features of the concept originated with a Fabian socialist planner, Professor Peter Hall. Yet Hall's "Freeport," as he termed it, was hardly orthodox British socialism. He argued that what cities needed to bring them back to life was not bigger doses of central planning or government cash, but rather

> an essay in non-plan, small, selected areas of inner cities would be simply thrown open to all kinds of initiative, with minimal control. In other words, we would aim to recreate the Hong Kong of the 1950's and 1960's inside inner Liverpool or inner Glasgow.[4]

Hall envisioned the areas both as free-trade zones and as zones where domestic business could operate with only minimal controls and taxation. In addition, he saw them as places where residence would be based on choice, and those who lived in the freeports would have to accept lower government benefits along with lower taxes. In effect, the zones would be largely outside the normal boundaries and jurisdiction of the host country.

The Conservative party took up Peter Hall's idea in a modified form when it came to power in 1979. For a year the concept was studied within the government bureaucracy before legislation was introduced and passed, allowing for 11 experimental enterprise zones.

[4]Stuart M. Butler, *Enterprise Zones: Greenlining the Inner-Cities* (New York: Universe Books, 1981), pp. 96, 97.

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The British enterprise zones are a far cry from Hall's original idea. They are generally vacant or derelict inner-city sites, averaging one square mile. For the most part the land is owned by the government or a nationalized industry, and the "rollback" of government is hardly sweeping. Business properties are exempt from property taxes (cities are reimbursed by the Treasury for the lost revenue), and plant and machinery can be depreciated in one year. The degree of deregulation is minimal. Other than a few minor changes in statistical reporting requirements, the only reduction in red tape concerns zoning. Instead of the normal procedure under which businesses must submit detailed plans that are then amended by the local government planning committee – a lengthy, uncertain and costly process – businesses in the enterprise zones receive automatic building permission, provided that basic designs meet a set of simple criteria. Needless to say, the British enterprise zones have not become havens for small entrepreneurs or innovative community associations. They are merely urban industrial parks.

There are many reasons why the British enterprise zones failed to live up to the boldness of their intellectual origins. But the question at issue is whether these factors are endemic to the whole approach, or whether they are avoidable in this country.

In the United States, a version of the enterprise zone concept is taking shape. At the time of writing, the Reagan administration has presented proposals to Congress,[5] and a number of states have enacted laws to create business areas with lower tax rates and some reduction in regulation. The state zones established so far are not very radical, although legislation in other states, such as Illinois and Kentucky, includes provisions that could mean substantial state and local deregulation. Understandably, most attention has focused on the federal initiative – which has the potential of making the greatest tax and regulatory impact on the designated zones. If we compare the development of the American initiative with the history of the British zones, we find some intriguing similarities and differences.

When Sir Geoffrey Howe, the present British treasury secretary, first suggested a modification of the Hall freeport idea, he warned of "grey men" in the bureaucracy, whose job it is to consider the administrative difficulties of any novel idea and to manufacture the small print that can kill any initiative. Once an idea descends into the hands of such men, he said, it can be counted as lost.

[5]The Enterprise Zone Tax Act of 1982 (H.R. 6009, S. 2298). For an analysis of the legislation, see Stuart M. Butler, "The Enterprise Zone Tax Act of 1982: The Administration Plan," Heritage Foundation *Issue Bulletin* No. 80, March 29, 1982.

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Yet this is exactly what happened to the enterprise zone concept in Britain. The idea disappeared from view when the Conservatives won power. Nobody talked about it; no conferences were held on the subject; no one really expected action to be taken. Meanwhile, the bureaucracy was quietly eradicating from the proposal everything it considered controversial. When the measure was finally laid before Parliament, it was the kind of legislation acceptable to the civil service.

The concept's journey through the American political system bears some resemblance to this process of emasculation, but there have been sufficient differences for us to believe that the final result may indeed be a program which will plant the seeds of free enterprise in the cities. This hope rests on a combination of political tactics, fortuitous political events, and the fact that we have learned from Britain's mistakes.

The Reagan bureaucrats treated the enterprise zone in the same fashion as their British counterparts did. Every attempt was made to slow down the evaluation process within the administration and to remove mechanisms which were new or controversial. The administration is supposedly conservative and ideological, but that did nothing to change the process in any noticeable way. Officials at Treasury, in particular, spent over a year chipping away at the tax incentives in the proposal. Political appointees at HUD did try to incorporate features that might break the hold of government in inner-city communities, but they were able only to score an honorable draw in their struggle with the career staff.

But unlike Britain, the enterprise zone has not been the sole property of the bureaucracy in this country. While officials tried to downplay the proposal and conducted their discussions behind closed doors, conferences, meetings, and media debates on the enterprise zone took place across the country. Moreover, an effective public relations campaign by proponents of the radical version of the concept accomplished two vital objectives. It succeeded in selling the enterprise zone concept to the wide spectrum of interest groups needed for it to have any chance of passage, groups ranging from grassroots and minority organizations to ultraconservative Republicans. By so doing, it achieved a second purpose of placing government officials and city planners very much on the defensive. In Britain it was government which developed a weak enterprise program and then, in effect, told the country to accept it. In America the bureaucracy has been under constant pressure to radicalize the proposal, and powerful political forces have emerged to improve the chances of this being done in the Congress.

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The growth of powerful support outside the administration has been greatly assisted by some of the budget slowdowns achieved in the first year of Reagan's presidency. While the budget reductions may be criticized as little more than a ripple in the growth of government, cities and other interest groups clearly believe that a fundamental change is underway. This has made them very receptive to the only urban initiative under consideration. Naturally the breadth of the enterprise zone coalition is not without its side effects. There are many supporters who see the program as a Trojan horse, which can be used as a vehicle to reintroduce many of the special-interest expenditures cut back in the budget. If they succeed in amending the plan to include appropriations, in addition to tax incentives and deregulation, then the opportunity presented by the enterprise zone will probably be lost. Once cash is made available, it will be used by those who oppose the philosophy of the zone approach to sustain themselves and crowd out their competitors. But so far the opponents of appropriations are in the minority—apparently more interest groups feel their budgets will be trimmed if money is added to the zone plan than feel they would benefit.

Budget pressures may help to produce effective enterprise zones in another way. There is a broad consensus that any enterprise zone program should be experimental: Only a limited number of designations should be made until the results can be measured. Of course, the same view was widely held in the case of Model Cities and other programs, but Congress kept expanding the number of sites for political reasons. This is much less likely to happen with enterprise zones because cities are not quite so inclined to embrace a program which requires local deregulation and tax cuts as one which simply hands out money. So there is a good chance that the tight limit on numbers will remain and that a reasonable degree of competition will occur among applicants.

The administration plan uses a priority system to choose between competitive applications. Cities are required to submit a local package of incentives, which must include some mixture of business deregulation, local expenditures, and the removal of barriers to neighborhood organizations. Local budget pressures due to federal cuts will make it difficult for cities to increase government activity as a method of improving their local package. Thus, if demand does exceed the supply of enterprise zones, it is probable that financially strapped city governments will be forced to consider serious business deregulation and greater freedom for community associations.

The British awarded 11 zones in their programs, and there was strong competition among applicant cities, many of which were con-

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trolled by the opposition socialist Labor party. One mistake made by the Conservative central government, however, was to agree in principle with certain cities that they would be chosen before the details of local zoning simplification had been approved. The *London Observer* noted the result:

> Before the choice of zones was made, competition was so keen that Whitehall (i.e., the central government) officials were simply telling councils that they would either accept the largely laissez-faire terms [sic] as they stood or drop out of the running. Now the local authorities will no longer be frightened to press for the terms they want.[6]

There is little doubt that political considerations will cause the same thing to happen in some instances in this country. We have evidence of it already. The South Bronx in New York City is generally expected to receive a zone designation because its congressman, Robert Garcia, is the key Democratic House cosponsor of the administration's Enterprise Zone Plan. It is interesting, but not surprising, that New York has indicated no willingness to prepare anything more than a token local package to complement federal tax and regulatory reductions. But other cities, such as Pontiac, Michigan, and Norwalk, Connecticut, which have no guarantee that they will be chosen, are feverishly trying to outbid their competitors by dismantling government controls. If the administration can maintain a reasonable level of uncertainty and draw up firm contracts with cities prior to final approval, there is a good chance that the bidding process will produce acceptable results.

The criteria under discussion in this country are very different from the British model, and this may also help to ensure that the zones become bastions of free enterprise. In Britain, the zones are virtually devoid of population. Some supporters of the enterprise zone concept favored such sites because they seemed to offer a chance to start with a clean slate. They would allow free enterprise to flourish without impediments erected by the political representatives of the resident population, either to protect vested interests or because of fear of change. Unfortunately, the major incentive offered in the British zones is a one-year depreciation of all new buildings and machinery in order to spur rapid development. This has made the zones most attractive to large-scale developers with heavy tax bills. Meanwhile, those entrepreneurs who rent obtained very little relief from their heavy sales and payroll taxes. Finally, the absence of population also meant the lack of any innovative com-

[6]*The Observer*, August 3, 1978.

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munity organizations that could become strong political power centers, pressing for even greater freedom within the zones.

In the United States, a minimum population of 4,000 residents looks certain to be a prerequisite for a zone designation. This means that the zones will probably be sited in residential inner-city communities with some abandoned buildings and vacant lots. The Reagan plan also encourages applicant cities to remove barriers to neighborhood organizations and small, local businesses. Thus, there is a good chance that a strong, independent political and business structure will result from an enterprise zone, and that this will help both to insulate the zones from city government and to provide plausible spokesmen for the virtues of enterprise zones in other communities.

Conclusion

The critics of enterprise zones recognize correctly that they do involve risk. There is a danger that the program which finally emerges from Congress will be too weak, despite the factors noted above. If that happens, and the zones are seen as a failure of the free market, there will no doubt be pressure for an increase in the role of government in the inner cities. That would hardly be anything new. The charge that "free enterprise" had failed in places like the South Bronx would be unjust. But it is likely that the most common reaction would be that blighted inner-city neighbors are impervious to improvement, not that free enterprise is inferior as a system.

But let us examine the possible results if the risk is rewarded with a reasonable degree of success. Let us assume that out of 100 or so zones designated over the next few years some 20 or 30 are areas in which zoning, occupational licensing, and other local regulations are noticeably relaxed. It would therefore be much easier for neighborhood associations to become more active in delivering services, and simpler – and so less costly – for small, local businesses to start up in basements and garages. Let us assume that the tax incentives offered by the federal government have the effect of stimulating modest investment and business creation, and that they also encourage some elements of the underground economy to surface and expand.

If that does occur in a number of cases, we will see enclaves of activity in otherwise desolate parts of our cities. They might be enclaves chosen mainly for political reasons, but that would not matter. Strong economic activity would send out equally strong political signals. The successful zones would be a clear demonstration that improvement flows from a reduction in man-made barriers and leads to creativity in even the most hostile environments. One would need only look across the borders of the zone to make a comparison

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with the alternative approach. No doubt other neighborhoods would press to be designated as enterprise zones. But this would mean further reductions in regulations and taxes, instead of the increases in federal expenditures and the controls that normally accompany program expansion. If the zones did, indeed, result in a mobilization of indigenous resources, and not the relocation of existing businesses, the creation of additional zones would have no significant negative effects on the earlier zones. So there would not be major opposition to "creeping" enterprise zones.

The encouragement of strong community organizations, offering services and an alternative political base for residents, would also help prevent the erosion of the zones from the outside. They would be a countervailing force to city officials and interest groups attempting to reimpose their authority and protections. Indeed, strong community organizations could become the agents of further deregulation in the zones, as they identify barriers to their own growth.

It has been admitted often in this article that there is no guarantee that the enterprise zone mechanism will operate as hoped. But there are good reasons, it has been argued, to feel that even an imperfect form of zone may set in motion forces that will tend to strengthen freedom rather than weaken it. If this belief is wrong, then we will have gambled and lost, but at least we were gambling to gain ground.

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THE E-Z ROUTE AND URBAN POLICY

John Rees

Peter Ferrara sees the enterprise zone concept as an "entirely new approach" toward solving the nation's urban problems. Yet the concept gives this writer a feeling of déjà vu, with the enterprise zone representing both an extension in policy and reduction in scope of President Carter's program of targeting federal aid toward very specific spaces within a metropolitan area. Ferrara traces the origin of the concept in the American policy arena to Stuart Butler, who has been attributed as the one responsible for introducing Peter Hall's original idea from the British context, via Geoffrey Howe, into Reaganese. Because the Ferrara and Butler papers complement each other, the former dealing with the evolution and rationale for enterprise zones and the latter with the concept as a political animal, it seems appropriate that they be discussed together.

As Stuart Butler suggests, the enterprise zone is a political animal – both at its very best and its very worst. It is the product of political compromise, perhaps of political tokenism. Given the initial attempts to zero out the Economic Development Administration, the Community Development Block Grants, and Urban Development Action Grants, and the potentially harsher reality of the Accelerated Cost Recovery System mechanism subsidizing more growth in the growth areas, the enterprise zone concept, or E-Z route, represents a retrenchment. It is merely an attempt to show that some form of urban policy is in effect during the tenure of the Reagan administration. Urban policy may be one of the few substantive areas, though, where the best policy is no policy.

One of Butler's major concerns involves criticism of the enterprise zone concept based on assumptions about the political process. "That

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it is better to wait for a complete victory on all fronts than to score a localized victory" is indeed a questionable criticism of the enterprise zone concept. Yet one must ask what is the real cost, both political and economic, of victory or indeed defeat. The creation of areas in the inner cities where "lower costs and less regulation . . . will build to spread freedom" are worthy goals. But the world of politics is pragmatic and sometimes devious. As Butler admits, "Political forces will always conspire either to dilute [enterprise zones] beyond recognition, or worse still, to use them as a vehicle for even greater government control." Because the "real-politik" of the enterprise zone concept has only begun, the political stakes are indeed high. Just as the Model Cities program had a cloning effect around the country, enterprise zones may multiply as they pass through the political arena.

Then what of the economic cost? Ferrara gives us a flavor of the Treasury Department's estimates of the revenue losses to the federal government, about $300 million per year for 25 zones. However, he provides no explanation of the derivation of these estimates. Statistically, as Butler suggests, the chances are good that this E-Z route will fail. If one of the facets of the enterprise zone concept is regulatory relief, policy analysts have to ask the inevitable question: "How do we spell relief?" There is little chance that policy analysts will see any economic success in the macro targeting policies of EDA of the recent past, the intermediate targeting strategies of CDBG and UDAG strategies, or the micro targeting efforts implicit in the enterprise zone idea.

There exists very little in the policy literature to suggest that tax and regulatory factors are important determinants of industrial or commercial locations (Rees 1980; Advisory Commission on Intergovernmental Relations 1980). Variations in tax costs are roughly one-tenth of the variations in the cost of labor, marketing, and transportation. And, on average, labor costs make up about 50 percent of a company's production costs. At the same time we must recognize that the relative importance of the tax differential factor appears to increase as the location process narrows down to a specific site within a broader region.

In spite of the evidence on the minimal impact of state and local government policy on industrial location, 45 states offer other types of low-interest loans; 25 states do not collect sales tax on newly purchased industrial equipment; 38 do not levy inventory taxes on goods in transit. Virtually all states and cities have industrial development agencies, and many states and local governments offer tax credits and rapid depreciation to encourage new investment in plant

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and equipment (Weinstein and Firestine 1978, pp. 134–139). One can only wonder why.

Let us consider an extreme example. Let's assume that a government subsidized the cost of setting up a plant in a depressed region to the tune of 50 percent of total investment in plant and equipment, and further supported this plant with other payroll subsidies and tax benefits. Let's assume that these schemes were called Regional Employment Premiums and Selective Employment taxes, that the company was called Chrysler, and that the place was Glasgow. And let's assume, correctly as the evidence has it, that all these subsidies were not enough to keep Chrysler alive in Scotland. The case was turned over to Peugeot; perhaps it could only be solved by Poirot!

The above example is not fictitious; it comes from post-Keynesian fascination with regional and urban policy in the United Kingdom. It is from this context that Peter Hall's original conception was born, as Stuart Butler accurately points out. But the concept in the American context today does not reflect Disraeli's concern for history: What we learn from history is that we do not learn from history.

Let's reflect a little more on the lessons of history. One result of European experience with such policies is that rapid depreciation encourages capital-intensive rather than labor-intensive investment, hardly a panacea for the labor pools of the nation's inner cities.

A second more important operational lesson concerns the border zone between the enterprise zone and the "unenterprising zones" that surround it. The creation of such zones can only create an Iron Curtain-type mentality in the grey areas between the zones and the more healthy suburban communities. In the history of British regional policy, intermediate areas were established between London and the development areas with a moderate amount of government subsidies (Keeble 1976). If enterprise zones are created, such intermediate areas will be inevitable creations of the body politic.

Can this enterprise zone cloud have no silver lining? There is a glimmer of hope in the concept, specifically the potential for indigenous economic improvement. What the Europeans have termed the "mobilization of indigenous potential" (Goddard 1982) is the road that must be taken before 1990 for this nation's economic recovery. I am not convinced that the E-Z route is the best one for mobilizing the indigenous potential of this country's urban industrial system. Indeed, Struyk and James (1975) and others, have shown very little evidence that the older, larger cities of the United States serve any longer as incubating environments for the birth of new enterprise. The mobilization of this indigenous potential for the long run has to lie in a coherent and more stable macroeconomic policy that encour-

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ages innovation and productivity, new capital formation, and a less erratic growth in money supply. In this regard, the ACRS and research and development tax credit components of the Economic Recovery Tax Act of 1981 are a step in the right direction. As for enterprise zones, I prefer to bury Caesar, not to praise him.

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ENTERPRISE ZONES: NEW DEAL, OLD DEAL, OR NO DEAL?

Otto A. Davis and *Denise DiPasquale*

I. Introduction

The purpose of this paper is to examine some of the salient features of the concept of enterprise zones, especially those aspects included in the administration's plan, in an effort to predict the actual outcome of this policy proposal if it is enacted and implemented. Even though the concept of enterprise zones is advertised as a new approach, a central part of our argument is that in terms of its incentives the proposed legislation basically is similar to previous programs. In fact, we argue that the present legislative proposal may be viewed best as a combination of selected features from previous programs rather than as a logical extension of the original ideas for enterprise zones. In making this observation, we distinguish between the rhetoric surrounding the legislative proposals and the actual initiatives. The current rhetoric has the appealing ring of free-market ideals. The actual legislative proposal backs away from the original ideals and retains the features of previous programs. Accordingly, the lessons learned from those previous efforts at the federal, state, and local levels provide important insights as to the expected impacts of the Enterprise Zone Proposal.

A central idea of the Enterprise Zone Proposal is that depressed areas can be rejuvenated by creating a climate which encourages economic activity. According to Stuart Butler, author of the major scholarly book in America endorsing the concept, Sir Geoffrey Howe,

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who attributes the basic idea to Peter Hall, was the major architect of enterprise zones in Britain.[1] The zones are supposed to be areas in which economic freedom is maximal and the forces of the market are to be unleashed. The basic notion is that economic activity is to be stimulated through the provision of incentives.

There have been differences in the various conceptions of enterprise zones. Peter Hall seems to emphasize entrepreneurship and especially young businesses. Sir Geoffrey Howe and the British legislature appear more willing to accept extensions of existing businesses. The administration's proposal, as opposed to the rhetoric associated with it, does not make a distinction between newly created and existing businesses. The major incentives included in the Reagan proposal are: relief from regulation and relief from taxation. However, to our knowledge, none of the various versions of the Enterprise Zone Proposal, British or American, involves total relief on either score.

Although basic underlying philosophical premises may be quite different, many previous domestic programs have operated by providing incentives. Some have provided tax incentives while others have provided direct subsidies. There is a clear relationship between tax incentives and direct subsidies in terms of the monetary impact on firms. The point is that previous and existing programs which operate with incentives provide experiences and evidence from which it is possible to draw inferences about the operation of enterprise zones. Major parts of this paper are devoted to summarizing some of the experiences of salient aspects of previous programs and attempting to apply some of the lessons from those programs to the current proposal for enterprise zones.

II. The Administration's Proposal

The administration's Enterprise Zone Program has two basic objectives. The first is to create jobs, with an emphasis upon disadvantaged and chronically unemployed workers, in the nation's depressed areas. The second objective is to redevelop and revitalize the designated

[1]See Stuart M. Butler, *Enterprise Zones: Greenlining the Inner Cities* (New York: Universe Books, 1981). The introductory statement prior to the first chapter outlines Sir Geoffrey Howe's basic conception. This book is a major exposition of the associated ideas. See also Peter Hall, "Enterprise Zones: British Origins, American Adaptations," *Built Environment* 7 (1981): 5–12. See also Susan S. Jacobs and Michael Wasylenko, "Government Policy to Stimulate Economic Development: Enterprise Zones," in Norman Walzer and David L. Chicoine, eds., *Financing State and Local Governments in the 1980's: Issue and Trends* (Cambridge: Oelgeschlager, Gurin and Hain, 1981), pp. 175–201.

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areas. While these are both popular and worthy objectives, they are not necessarily consistent if recent history is taken as a guide. Experience suggests that *successful* revitalization efforts often result in displacement of low-income households without creating great numbers of primarily low-skilled jobs. The program aims at stimulating private sector economic activity within the zones with a special emphasis on low-skilled jobs, which although laudable in its aims, probably works against the current of successful revitalization experiences.

Although there may have been a philosophical preference for entirely new and entrepreneurial economic activity, the program recognizes and welcomes any private sector economic activity that might be attracted to the designated areas. The reason for this concession may be a recognition of the administrative difficulties that may be encountered in any attempt to distinguish between entirely new and relocated economic activity.

At the federal level, the program does not require any new appropriations. However, state and local jurisdictions are free to allocate their discretionary federal funds to enterprise zones or to appropriate any additional funds to the zones. Basically, the program intends to provide: relief from federal, state and local taxes; regulatory relief at the same levels of government, although relief from federal regulation is constrained; improved public services; and private sector, local, and neighborhood involvement in the program.[2] Presumably, the program will be influenced greatly by the way it is administered and especially through the process of designating areas to become enterprise zones.

In addition to insuring that state and local contributions are to be made towards the above features of the program, the designation process itself is supposed to be governed by criteria which are designed to help insure that: (1) efforts be made to improve the "infrastructure" of the area and provide such things as job training or activities which might reduce business insurance costs; (2) disadvantaged workers and those suffering from long-term unemployment be available within close proximity of the zone and that job opportunities for these workers be available in the zone; (3) private entities make commitments to the zones; (4) efforts be made to help insure that new economic activity is stimulated; and (5) other conditions be satisfied which might be determined by the Secretary of Housing and Urban Development, which are consistent with the intent and philosophy of the

[2]*The Administration's Enterprise Zone Proposal* (The White House: Office of the Press Secretary, March 23, 1982), p. 3.

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Enterprise Zone Program, and which might help minimize the unnecessary loss of tax revenues to the federal government.[3]

Aside from the administration of the program, which presumably will be conducted in accordance with the above criteria, the federal contribution is largely limited to the provision of special tax credits. This characterization appears to be valid since federal regulatory relief is provided only by discretion, and the set of regulations that can be relaxed is limited significantly. This restricted use of regulatory relief diverges from the basic concept of enterprise zones.

It may be that Sir Geoffrey Howe was initially as much interested in the adverse effects of regulation and other bureaucratic procedures on business activity as he was in taxation. Certainly, the early discussion by Peter Hall and others emphasized a reliance upon free enterprise and stressed the possibility that the regulatory bureaucracy may have "run amuck," thus effectively stifling the private market. For example, Hall summarizes his proposal by stating:

> Free Zones, I argued in 1977, should be free of United Kingdom taxation, social services, industrial and other regulations. Bureaucracy would be kept to an absolute minimum; so would personal and corporate taxation. Trade Unions would be allowed, as in Hong Kong, but there would be no closed shops. Wages would find their own level.[4]

In other words, Hall had in mind not only tax incentives but the broad relaxation of regulations, including minimum wage requirements.[5]

It would be difficult to deny at least a widespread belief among businessmen that the absence of regulation might have a positive effect upon their plans. However, perhaps for valid political reasons, the administration chose to back away from the notion of removing regulatory constraints by proposing that discretionary authority to relax or eliminate regulations within enterprise zones be given only at the request of state and local governments, and that regulations affecting civil rights, safety, and health (including possible environmental matters), as well as those specifically imposed by statute such as minimum wage requirements, be exempted from the act.[6] However, state and local governments are encouraged to provide relief from their own regulations. In fact, the relaxation of state and local

[3]Ibid., p. 5.

[4]Hall, p. 6.

[5]Hall also stressed the free movement of labor and capital, and placed a special emphasis on entrepreneurship and the creation of new enterprises.

[6]*The Administration's Enterprise Zone Proposal*, p. 15.

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regulations is among the items administratively considered in the selection of enterprise zones.

The contribution from federal tax "expenditures" includes the following: (1) an investment tax credit of three or five percent for capital investments in the zone and a credit of 10 percent for the construction or rehabilitation of commercial, industrial, or rental housing structures within the zone; (2) a 10 percent non-refundable tax credit for employers for payroll paid to qualified zone employees up to a maximum credit of $1,500 per worker; (3) a non-refundable tax credit for employers for wages paid to zone employees who were also disadvantaged individuals when hired; (4) a five percent non-refundable income tax credit for taxable income earned in zone employment (up to a maximum of $450 per worker) for zone employees; (5) the elimination of capital gains taxes on the sale of qualified zone property; (6) the continued utilization of industrial development bonds for small businesses within the zone; and (7) the provision for operating loss carry-over.[7]

Clearly, these provisions of the program are intended to be incentives to stimulate private-sector economic activity. Essentially, the program amounts to special incentives for designated areas. It should be analyzed in light of these incentives.

III. The Relevance of Experience from Other Programs

If the philosophy behind the Enterprise Zone Program is different from previous efforts to create jobs and revitalize urban areas, and the rhetoric certainly contrasts with that associated with other programs, then how can the experiences of those previous efforts provide any guidelines for evaluation? The answer lies in the similarities of the components of the Enterprise Zone Proposal to the components of previous programs.

Previous federal, state, and local programs have been designed to encourage economic activity, revitalize deteriorated urban areas, and create jobs. Some programs have provided tax concessions while others have provided direct subsidies. While the Enterprise Zone Proposal examined in this paper primarily provides a tax incentive package, previous efforts that involve tax incentives as well as those that involve direct subsidies are relevant. Both tax concessions and direct subsidies decrease the cost of doing business at a particular location. Since the expected monetary value of a tax concession may be calculated, tax concessions and direct subsidies can be compared.

[7]Ibid., pp. 6–7.

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There is, of course, literature on the effects of taxation on business location. Since the federalism of the American system has provided different tax rates across many municipalities, and the idea of state and local governments providing tax incentives to encourage economic development is not new, this literature is extensive and may provide some insight as to the expected impacts of the incentives provided in the Enterprise Zone Proposal. Portions of the relevant literature are reviewed in the next section. In addition, there have been several programs designed to revitalize deteriorated sections of urban areas. There are many similarities between these efforts and the current proposal. In section five, we review parts of the relevant literature on previous revitalization programs and compare these efforts with the current proposal. Finally, there have been many previous programs designed to create jobs. There is an extensive literature on the relative merits of these programs. In section six, we examine parts of this literature in order to evaluate the expected impacts of the employment portions of the Enterprise Zone Proposal.

IV. Effects of Taxation and Fiscal Variables upon Economic Development

Businessmen are fond of saying that they are hampered by unduly high taxation. In fact, it is argued often that tax policy has an important impact on the decisions made by firms. Those who have had the experience of sitting on state and local tax reform commissions, for example, often hear business representatives espouse the view that state and local tax policies may be important for economic development. They are told that favorable tax laws or tax breaks can be powerful inducements to attracting business.

State and local governments typically have expressed considerable interest in stimulating economic development within their borders. Often these governments have utilized a wide variety of fiscal tools in an effort to attract new businesses. The tools available to these governments include industrial revenue bond financing and other state and local subsidized loans for new businesses; tax exemptions or at least moratoriums on the taxation of land, capital improvements, equipment, and even machinery; and, in some states, accelerated depreciation on state corporate income taxes.

Given our decentralized system of government, at least two experiments have been ongoing which concern the effects of tax policy upon business location and the creation of new enterprises. First, there are the special efforts made by state and local governments to attract new business activity and to promote economic development. Second, there is the natural variation in tax policy that exists among

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state and local governments, given American federalism. In making the intraurban location decision, for example, firms may be expected to consider relative tax burdens and public services provided by various local jurisdictions.

While there has not been much written on specific state and local programs to promote economic activity, there is an extensive literature on the determinants of business location. A subset of this literature examines the effects of differences in fiscal variables on business location. What can be learned from studies of actual business location or relocation?[8] In contrast to the rhetoric, there appears to be a general agreement in this literature that fiscal variables do not play an important role in determining business location. As an example, in his study of manufacturing firms choosing between opening new branch plants and on-site expansion of existing plants, Schmenner found that firms consider relative labor costs, availability of skilled labor, coverage of geographic market territory, transportation and logistics costs, economies of scale, and other such variables.[9] Fiscal variables were hardly mentioned. Similarly, in a statistical analysis aimed at separating the characteristics of movers from stationary plants, variables such as room to expand, marketing considerations, and labor considerations appeared, but fiscal variables did not seem to be important. Schmenner concludes:

> There seems to be an actual competition between states and between cities on which jurisdiction can devise the broadest package of tax and financing inducements: property tax holidays, property tax abatements, property tax rollbacks, state income tax breaks, sales tax exemptions, loss carry forwards, manpower training assistance, guaranteed loans, industrial revenue bonding. . . . In point of fact, however, tax incentives are either not applicable or of low concern to the typical relocating plant around a metropolitan area.[10]

Schmenner's results are consistent with most of the literature on the determinants of business location. The general conclusion of this literature is that tax and fiscal variables are generally overwhelmed by other influences upon location such as the available labor force, its quality, degree of unionization, and loyalty; market advantages and openings; transportation considerations; and availability of raw materials.

[8]There is not an overwhelming volume of literature devoted to this topic. Roger W. Schmenner, *The Manufacturing Location Decision*, Economic Development Research Report from the Harvard Business School to the Office of Economic Research (Boston: Economic Development Administration, U.S. Department of Commerce, 1978) contains an excellent bibliography.

[9]Ibid.

[10]Ibid., pp. 5–26, 5–27.

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There is a tradition for the study of the location of economic activity in the public finance and urban economics literature. Much of this work focuses on the intraurban location decision. What factors are most important to a firm that is choosing among various sites within an urban area? To what extent do the relative tax burdens and various public service packages provided by local jurisdictions influence this location decision? In a recent study, Erickson and Wasylenko examine the site choice, among various suburban communities, of firms relocating in the Milwaukee SMSA. Erickson and Wasylenko conclude:

> In summary, the findings here indicate that relocating firms in all industries choose suburban sites on the basis of agglomeration economies and proximity to an available work force. Construction and wholesale trade firms seek less expensive land, while manufacturing firms tend to locate along interstate highways. Manufacturing firms also locate in municipalities in which there is a relatively large amount of vacant land, probably for convenience of expanding the plant on site at a later date.
>
> Fiscal variables do not appear to be an important factor in firms' site selection decisions.[11]

It should be stressed that this study examines only the choice among suburban communities and not the choice between the central city and suburban communities where fiscal variables may be expected to be more important.

In a recent survey of the literature on intraurban industrial location, Oakland finds little evidence to suggest that local tax policies influence industrial location decisions.[12] However, Oakland hesitates to conclude that local taxes have little influence on the location decision. He argues that since most studies have ignored other constraints placed on firms by local governments, such as zoning, it may be difficult to draw valid conclusions from this evidence. Given this concern, Wasylenko reexamined his data, excluding from his sample all local jurisdictions that zone out industry.[13] His new results suggest that local taxes have a significant impact on manufacturing and wholesale trade firms that are choosing among suburban locations. Local

[11]Rodney A. Erickson and Michael A. Wasylenko, "Firm Relocation and Site Selection in Suburban Municipalities," *Journal of Urban Economics* 8 (1980): 83.

[12]William Oakland, "Local Taxes and Intra-Urban Industrial Location: A Survey," in George Break, ed., *Metropolitan Finance and Growth Management Policies* (Madison, Wisconsin: University of Wisconsin Press, 1978). Schmenner, *The Manufacturing Location Decision*, also references much of this literature.

[13]Michael J. Wasylenko, "Evidence of Fiscal Differential and Intrametropolitan Firm Relocation," *Land Economics* 56 (1980): 339–349.

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taxes remain insignificant for construction, retail, finance, and service firms.

While these results are interesting, it is still difficult to conclude that taxes have a major impact on firms choosing among sites within an urban area. Most of the literature on this topic suggests that taxes have little impact on the location decision. While Wasylenko finds some impact on manufacturing and wholesale firms, it is difficult to generalize from empirical evidence from one urban area. Zoning laws vary widely across local jurisdictions. In many cases, zoning laws are not enforced or are changed easily to accommodate business plans, especially when new jobs are involved. As a result, it is difficult to dismiss the evidence presented in most of the literature.

Finally, although the rhetoric surrounding the Enterprise Zone Proposal encompasses new business starts and a revival of small business activity, there is a real lack of solid empirical research on the conditions necessary for above-normal levels of entrepreneurial activity. Although we know that in our history various areas in the United States have been locations for significant entrepreneurial activity – Pittsburgh at the turn of the century, Boston in the post-war years, and recently the San Francisco Bay Area — there is little solid understanding of why these concentrations of activity occurred. We know of no evidence which suggests that fiscal variables might have caused these concentrations of entrepreneurial activity.

V. Evidence from Programs Aimed at Urban Revitalizations

Since World War II, there have been several federal initiatives designed to encourage economic development. The central goal of these efforts has been to revitalize the physical and economic conditions within an urban area. The Enterprise Zone Proposal represents the Reagan administration's attempt to achieve this goal. While the rhetoric and underlying rationale associated with this proposal are quite different from those associated with previous efforts, a closer examination of the components of the Enterprise Zone Proposal shows many similarities between this program and other efforts. In order to illustrate our point, we will briefly consider two other major federal efforts to revitalize urban areas—Urban Renewal and Urban Development Action Grant Programs (UDAG)—and compare these programs with the Enterprise Zone Proposal.

Under the urban renewal program, local redevelopment authorities used federal funds to buy and clear land in urban areas, with the

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goal of selling it at below market prices to private developers. This reduction in price was to provide the incentive for the private sector to develop particular sections of the urban area. The relative merits of this program have been studied extensively.[14] The success of the urban renewal program was rather mixed. In some cases, private developers bought the cleared land from the local authorities and successfully developed the land. In other cases, local redevelopment authorities bought and cleared land but could not interest developers in the acquisition of the land. As a result, some of the sites remained vacant or eventually were used for public facilities.[15]

The UDAG program was enacted in 1977 as the Carter administration's proposal to revitalize urban areas. The program is designed to provide funds to economically and physically deteriorated cities. In order to be eligible for UDAG funds, a city must meet eligibility criteria based on the age of the housing stock, incidence of poverty, unemployment, growth in population, and growth in retail and manufacturing employment. As part of the application for UDAG funds, city officials must present a project which involves the cooperation of the city government and private investors. In other words, before UDAG funds are provided, there must be a commitment from private investors to participate in the project.[16] This requirement of a prior commitment from private investors distinguishes the UDAG program from previous efforts under urban renewal. As a result of this requirement, the investor can influence all aspects of the project design, including the choice of location of the development site. It is this flexibility that is considered to be the major advantage of the UDAG program over its predecessors.

Since the UDAG program is relatively new, there have not been many evaluations of the success of the program. Webman examines the extent to which the UDAG program subsidized private investment in the most distressed urban areas and to what extent the program sparked new investment that would not have occurred in the absence of the program. He concludes from the evidence that more distressed areas received more of the UDAG funding, but the development activity within these areas was consistent with existing

[14]See Jerome Rothenberg, *Economic Evaluation of Urban Renewal* (Washington, D.C.: The Brookings Institution, 1967); Otto A. Davis and Andrew Whinston, "The Economics of Urban Renewal," *Law & Contemporary Problems,* Winter 1961; and James Q. Wilson, ed., *Urban Renewal* (Cambridge, Mass.: MIT Press, 1966).

[15]Jerry Webman, "UDAG: Targeting Urban Economic Development," *Political Science Quarterly* 9, no. 2 (Summer 1981): 192.

[16]Ibid.

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trends. In other words, "UDAG projects build on existing locational advantages rather than attempt to create new ones."[17]

There are similarities between the Enterprise Zone Proposal and the urban renewal and UDAG programs. The Enterprise Zone Proposal is place specific—a specific geographic area rather than a specific project is designated. Thus, firms considering participation in the program must accept the location as given. In this respect, the proposal is similar to the urban renewal program. As already stated, urban renewal was an entitlement program with direct federal subsidies, while the current proposal provides tax incentives. Since the expected monetary value to firms of the tax incentives is a relatively straight-forward calculation, it is possible to compare these incentives with direct subsidies.

In order for a jurisdiction to be eligible for the designation of an enterprise zone, the jurisdiction must meet the eligibility criteria set forth in the UDAG program as well as additional criteria proposed in the Enterprise Zone Bill. However, all areas that meet the eligibility criteria are not necessarily designated as enterprise zones. The Secretary of HUD evaluates eligible applications from state and local governments and chooses among these applications to fill the available designations in a given year. Under the UDAG program, private sector commitment to the project is required before a project can be approved. The enterprise zone backs away from the requirement somewhat. While the level of private sector commmitment is one of the criteria for selection as a zone, it is certainly not a requirement for designation. As a result, a zone may be designated but not generate economic activity. The Enterprise Zone Proposal has an advantage over urban renewal in that no federal dollars are spent unless firms locate within the zone. Currently, the UDAG program is still in operation, but there is little said in the enterprise zone discussion about efforts to coordinate the UDAG and enterprise zone programs.

Finally, as noted earlier in this paper, the goal of revitalizing specific portions of urban areas may be somewhat inconsistent with the goal of generating employment opportunities for disadvantaged workers living within or in close proximity to the zone. Successful revitalization efforts have often resulted in displacement of low-income households, and there is little evidence to suggest that significant numbers of employment opportunities were provided through these revitalization efforts for these households. However, the enterprise zone package does include specific incentives for creation of low-skilled jobs. These incentives may be viewed as analogous to many of the previous federal programs on employment. We will now

[17]Ibid., p. 206.

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examine the experience of some of those programs in order to begin to evaluate the expected impact of the Enterprise Zone Proposal.

VI. Evidence from Programs Aimed toward Employment

Certainly, the major instruments of the Enterprise Zone Proposal are aimed at employment. This is an area, of course, in which the nation has had considerable experience, not all of which has been favorable. We might classify previous employment programs in three categories: public sector employment programs, training programs, and programs for employment in the private sector. Most of our experiences have involved some combination of two or more of these types.

Public employment has been a very popular strategy in attempting to address the nation's unemployment problem. With the exception of what this experience might indicate about the nation's ability to put the disadvantaged to work, these programs have no implications for the Enterprise Zone Proposal.

The second type consists of training programs. There have been a variety of these. By far the most widely known and best studied is the Job Corps. Training programs vary from programs aimed at qualifying disadvantaged individuals to become members of craft unions, which is the purpose of such institutions as the Pittsburgh Plan, to programs associated with institutions such as Opportunities Industrialization Centers. The latter includes efforts aimed at particular jobs as well as general vocational training programs.[18] The literature about some of these programs raises issues which have relevance to the proposal under consideration.

Finally, there have been efforts to stimulate employment in the private sector itself. One kind of effort has involved direct subsidies, while the other has been mostly tax allowances.

Unfortunately, it is very difficult to assess the true impact of job creation programs on aggregate employment. For example, the direct subsidies to public bodies for the employment of the disadvantaged probably did create jobs. However, the impact is probably much less than the number of people supported by the program. Over time, workers can be substituted one for another. Tasks once supported by

[18]There is a host of literature which is relevant here. For a general background see, for example, Peter B. Doeringer, *Programs to Hire the Disadvantaged* (Englewood Cliffs, N.J.: Prentice Hall, 1969); G. L. Mangiern, *MDTA: Foundation of Federal Manpower Policy* (Baltimore: Johns Hopkins Press, 1968); and A. R. Weber, F. H. Cassell and W. L. Ginsberg, eds., *Public-Private Manpower Policies* (Madison, Wis.: Industrial Relations Research Association, 1969).

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one budget can be turned over to those on another playroll. This substitution effect becomes of paramount importance in trying to assess the impact of the creation of employment in the private sector. Do the efforts to stimulate private sector employment simply replace one kind of worker with another? Hence, economists have been very concerned with trying to estimate the impact of the programs on the supply of labor.[19]

Even the simpler direct effects are difficult to determine. For example, do initial jobs tend to lead to continued employment or does the effect tend to wash out over time so that even the same individuals may not experience lasting impact from these programs? Further, one would hardly expect lasting impacts to be independent of particular experiences and the variety of efforts that may have gone into the employment opportunities which the programs may have created. Strategies do appear to matter.[20] Some kinds of training and support services have more direct impacts than do others. Similarly, there is a general consensus that efforts marginally to upgrade employment possibilities are more likely to be successful than efforts to change the so-called "hardcore" unemployed into productive workers. In other words, programs designed to provide relatively small movements up the occupational ladder appear to be more successful than attempts to make giant steps. Long-term impacts also appear to vary according to the characteristics of the workers. For example, gains for females in terms of job status and wage differential as a result of training appear to be more lasting than those for males who participated in Manpower Development and Training Act programs.[21]

In addition to all the above, training efforts often have effects which might not be fully anticipated or appreciated. An evaluation of the Job Corps, for example, found that not only did participants make less use of other public efforts, such as welfare and education programs, but they also tended to commit fewer crimes. Indeed, the effect upon criminal behavior was a substantial benefit, at least if one

[19]Two recent publications cover many of the topics which are addressed in the rather large literature. See John L. Palmer, ed., *Creating Jobs: Public Employment Programs and Wage Subsidies* (Washington, D.C.: The Brookings Institution, 1978); and Robert H. Haveman and John L. Palmer, eds., *Jobs for Disadvantaged Workers: The Economics of Employment Subsidies* (Washington, D.C.: The Brookings Institution, 1982).

[20]See, for example, Otto A. Davis, Peter M. Doyle, Myron Joseph, John S. Niles and Wayne D. Perry, "An Empirical Study of the NAB-JOBS Program," *Public Policy* 21 (1973): 235–262.

[21]Orley Ashenfelter, "Estimating the Effect of Training Programs on Earnings," *Review of Economics and Statistics* 60 (1978): 47–57.

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believes the results of this particular evaluation.[22] These effects were in addition to observed increases in long-run employability which resulted in increased output as well as reduced antisocial behavior in later years.

There is probably a consensus that employment programs result in some substitution of low-skilled for higher-skilled workers.[23] Such an effect, of course, follows directly from a simple application of microeconomic theory, and it appears to be consistent with empirical estimates. There is controversy over the effects of wage rate subsidies and other programs which redistribute income upon the net labor supply. On the other hand, a portion (perhaps one-third) of the budget cost of an employment subsidy may be recouped by reductions in other transfer payments and by increased taxes.

There also appears to be an emerging consensus that employment programs do add jobs to those otherwise sustained by the economy. One estimate has it that one-half to two-thirds of a percentage point of reduction can be obtained in the aggregate unemployment rate by such programs without having an impact upon the inflation rate.[24] Although most of the literature on employment subsidies has focused on subsidies paid to employers, there is some evidence that subsidies to employees may be at least, and perhaps more, effective in stimulating labor supply. Both kinds of subsidies are involved via the tax mechanism in the Enterprise Zone Proposal.

All in all, this literature suggests that jobs programs do add to the aggregate employment in the economy. While there is little consensus about the effectiveness of these programs and much less consensus about the precision of the reported estimates, a good guess is that the costs in terms of either budgetary outlays or forgone revenues amounts to somewhere between $10,000 and $50,000 per job created across the range of efforts that have been observed in our experience with these programs. A large majority of the estimates range in the lower half of this interval.

The Enterprise Zone Proposal provides tax credits to firms that locate within a designated zone for every disadvantaged individual

[22]David A. Long, Charles D. Maller, and Craig V. D. Thornton, "Evaluating the Benefits and Costs of the Job Corps," *Journal of Policy Analysis and Management* 1 (1981): 55–76.

[23]This discussion largely summarizes (maybe not accurately) results reported in papers by Donald A. Nichols, "Notes on the Noninflationary Unemployment Rate"; Ronald I. Herman, "A Comparison of Employer and Worker Wage Subsidies"; and David M. Betson and John H. Bishop, "Wage Incentive and Distributional Effects," in Haveman and Palmer, *Jobs for Disadvantaged Workers*.

[24]See Nichols.

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hired. Since this is a major part of the incentive package, firms with relatively low-skill labor needs may be expected to be attracted to such locations to a greater extent than firms that require highly skilled labor. The evidence reviewed in this section suggests that such credits may create new jobs. However, there is likely to be substitution in the employment mix. Thus, the net impact of these credits will be less than the number of credits claimed by firms that locate in the zones.

VII. Concluding Remarks

The Enterprise Zone Proposal has two desirable goals: the creation of jobs for disadvantaged workers and the revitalization of economically and physically distressed urban areas. The proposal was introduced amid statements that would lead one to believe that an entirely new approach was forthcoming. Indeed, the creators of the original proposals may have had something akin to libertarian ideals in mind. However, the administration's proposal appears to have been framed under influences that, perhaps understandably, seem more akin to practical politics than the original ideals. While the original concept put forth by Howe, Hall, and others proposes the designation of zones which are free from government regulation and taxation, the administration's proposal falls far short of total relief on either score. In the case of regulatory relief, the proposal backs away from the original idea of eliminating regulations in the zones, especially at the federal level. Essentially, the regulatory relief portion of the proposal boils down to encouragement of state and local governments to relax their regulations in the zones. As a result, the central component of the proposal is a tax incentive package to encourage economic activity within the zone and to create jobs.

Previous and existing state and federal programs have provided monetary incentives aimed at business location and job creation. Hence, we have attempted to summarize and review the relevant literature in an effort to use the lessons drawn from those experiences to provide insight as to the expected impacts of the Enterprise Zone Proposal.

Our review indicates that previous efforts which provided incentives for the revitalization of distressed areas do not provide evidence which creates optimism that this proposal will encounter great success. Nor do studies which examined the effects of tax and other monetary incentives on the locational decisions of enterprises cause one to believe that there will be an impressive or even significant flood of businesses into areas designated as enterprise zones. Taxes are only one of many elements that have an influence upon retained

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profits. Unfortunately, perhaps, the empirical evidence appears to indicate that these other factors are so much more important in locational decisions that the possible effects of observed tax differences are simply overwhelmed. Unfortunately, there is little evidence available on the factors which lead to the creation of new enterprises and nothing, to our knowledge, that links the creation of new business to tax incentives.

The evidence which is most favorable to the Enterprise Zone Proposal comes from the literature which examines the efforts to employ the disadvantaged and otherwise unemployed. Although this rather large literature documents many failures, there may be a tentative consensus that jobs programs can have an impact upon aggregate unemployment. Yet, the lessons from the literature relating to employment may not be of great comfort to advocates of the Enterprise Zone Proposal. While there may be some success on this score, the net impact in terms of the number of jobs created will be less than the credits claimed. Those that expect significant reductions in unemployment in close proximity to the zones may be disappointed.

Perhaps the greatest problem with the Enterprise Zone Proposal lies in its definition of goals. The proposal is designed to achieve at least two major goals: to create jobs for the disadvantaged and the chronically unemployed, and to revitalize economically and physically depressed areas. While these are both laudable goals, they are aimed at large and complex problems. Is it possible to pursue both goals in one program?

Finally, some supporters of the Enterprise Zone Proposal emphasize its experimental nature. There is merit to experimentation in public programs. Indeed, experimentation, especially if conducted in a carefully considered manner, may even be sufficient to support particular public programs. The logic is even more convincing when the proposed experimental programs are accompanied with associated efforts to evaluate and learn from the experiments. The evidence drawn from the above literature suggests that such a justification, rather than the promise of nirvana, would be a more prudent basis for a proposal such as the one under discussion here.

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ENTERPRISE ZONES: SOME EMPIRICAL OBSERVATIONS

Wayne E. Ruhter

Davis and DiPasquale let other commentators discuss whether the administration's Enterprise Zone proposal truly reflects a "free enterprise" experiment. They also set aside the question of whether some assistance should be given to economically distressed areas. Instead they take the program at face value and offer a quantitative judgment: Experience indicates that there will be few employment and economic development results. This comment follows their empirical lead.

To support their pessimism Davis and DiPasquale marshall evidence from earlier job-creation programs. Here the existing research, fairly well-grounded in price theory, does suggest that there will be changes in employment from the proposal's wage subsidy features, but they probably will not be substantial. The effects, however, could be enhanced if the wage subsidy increases local economic development, and if the other parts of the proposal also have an appreciable effect on that development.

Considering the possibility of increased zone business activity, Davis and DiPasquale argue that previous research strongly suggests that fiscal variables do not matter significantly for economic development. They therefore conclude that this component of the Enterprise Zone proposal will be ineffective. Their conclusion, however, is questionable. In reviewing the literature, one does find many arguments that taxation does not play an important role in business location decisions. Questions arise, however, about the applicability of this literature and the evidence for its supposed conclusions. Actually, little is known about the measures of taxation's effect on

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the birth of firms—a key part of the Enterprise Zone proposal. Even less seems to be known empirically about taxation's role in the demise of firms.

The most common method of studying business location decisions has been to question company executives. The usual finding of these studies has been that state and local taxation rank low on the list of location determinants. Commentators typically have used this ordering to claim that taxation is not an important factor in a firm's choice of location. Yet when other variables have been properly controlled, these surveys often show that fiscal variables do influence site selection.[1] This occurs, for instance, when a firm has apparently chosen a region for non-tax reasons, and local tax differences become an intraregional site determinant. But even this approach to identifying tax effects on business location lacks the ability to detect the subtle adjustments commonly observed in economic behavior. It would be very surprising if local taxation and business location have the distinctive role of being outside the sphere of equimarginal principles.

Given the well-known problems in predicting business behavior from what business people say influences their decisions, surprisingly little published work attempts to relate observed local economic development to fiscal and non-fiscal variables. Noteworthy exceptions include the articles by Carlton, Erickson, and Wasylenko.[2] Although these studies generally failed to detect significant tax effects, a review of them would indicate a number of plausible explanations. Rather than attempt to treat these here, we refer the reader to Robert Newman's most recent research.[3] His study finds that differences in interstate corporate income taxes have a very significant effect on business location.

Despite Newman's evidence, the Enterprise Zone program may be a disappointment in fostering economic development. Urban development may be hampered by the risk that the lower taxes, supplemental project funding, and regulatory relief intended to attract firms to urban enterprise zones may unexpectedly be withdrawn in

[1]For example, see T. E. McMillan, "Why Manufacturers Chose Plant Locations vs. Determinants of Plant Locations," *Land Economics* 41 (1965): 239–46.

[2]Dennis Carlton, "Why Firms Locate Where They Do: An Econometric Model," in W. C. Wheaton, ed., *Interregional Movements and Regional Growth* (Washington, D.C.: The Urban Institute, 1979), pp. 13–50; Rodney A. Erickson and Michael Wayslenko, "Firm Relocation and Site Selection in Suburban Municipalities," *Journal of Public Economics* 8 (July 1980): 69–85; Michael J. Wasylenko, "Evidence of Fiscal Differentials and Intrametropolitan Firm Location," *Land Economics* 56 (August 1980): 339–49.

[3]Robert Newman, "Industry Migration and Growth in the South," *Review of Economics and Statistics* (forthcoming).

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the future. A recent case in Oklahoma illustrates this point.[4] General Motors claims it located a plant there because of special tax breaks, but now faces increased taxes of $100 million following a ruling by the new state attorney general, who declared the tax reductions unconstitutional. Such reneging is more tempting the less mobile the enterprise zone businesses are. Correspondingly, the anticipation of such political opportunism can influence the type and amount of business developed in enterprise zones. A significant part of the program will be its features to inhibit such opportunism.

In announcing its Enterprise Zone proposal, the administration estimated the program's expense at $124-310 million per year initially in lost federal tax revenues. Since 10 to 25 zones will be designated annually, quick arithmetic suggests that the Treasury believed each zone will on average cost $12.4 million. Apparently the Treasury believes this measure approximates the tax receipts that will be lost as businesses move to the zones, activities that would otherwise have occurred elsewhere. Since such a move entails no net stimulation of economic activity, the estimated tax loss reflects a conservative view of the enterprise zones' potential to generate local business activity. Once we raise legitimate questions about the strength of firms' responses to the zones' proposed federal tax incentives and to the yet-to-be revealed state and local inducements, any estimate of federal tax losses can only be a rough guess. But consider a back-of-the-envelope exercise to draw out the implications of the Treasury's estimate.

Suppose federal tax breaks for enterprise zone businesses reduce average tax rates by 50 percent and that current tax rates average 25 percent. If we expect the tax loss per zone to average $12.4 million per year, this implies that on average each zone will gain about $100 million in annual business activity ($12.4 million/.125 ^ $100 million). Although this is a crude calculation, which depends on the assumed changes in tax rates, it does provide a rough measure of the prospective economic activity an average enterprise zone could experience.[5]

One intriguing feature of the Enterprise Zone proposal is that suitable zones can be designated Foreign Trade Zones (FTZs), even

[4]"Oklahoma Populist Stirs Up Bitter Fight Over Tax, Financing Breaks for Business," *Wall Street Journal*, June 29, 1982, p. 29.

[5]It must be noted, however, that this gain in business activity in the enterprise zone is assumed to be offset by a loss of business activity outside the zone. If the increase in economic activity within the zone *exceeded* the loss of activity outside the zone, tax losses would, of course, be less than the Treasury's estimated $12.4 million.

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if they fail to meet existing requirements. At present FTZs are located at ports of entry within the United States and its territories and offer opportunities for businesses to reduce United States customs duties and trade restrictions. FTZs have exhibited dramatic growth in recent years, providing a useful example of how tax breaks and deregulation can be used to stimulate economic development.

Prior to 1970, however, FTZ incentives did not apparently generate the desired economic growth.[6] Thus, we must wonder about the immediate relevance of the FTZ experience for the Reagan administration's Enterprise Zone proposal. In concluding with this skeptical point, we can appreciate Davis and DiPasquale's pessimism. The lack of strong empirical evidence about the expected benefits of enterprise zones and speed with which they can be achieved, coupled with the political uncertainties about the program's implementation, must temper overly enthusiastic claims for immediate measures of the program's success.

[6]FTZs have existed since 1934.

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URBAN HOUSING PROGRAMS: WHAT IS THE QUESTION?

John C. Weicher

> *What is the answer? [Silence] In that case, what is the question?*
>
> – Gertrude Stein's last words

The record of American housing policy represents something of a paradox. The basic purpose of subsidized housing has been to enable everyone, including the poorest, to live in "decent, safe and sanitary" housing. In fact, virtually everyone now does, at least according to the traditional notions of decent housing. One inference might therefore be that past policy and programs have been successful. But that is not at all the general perception, either of housing conditions or housing programs. There is a very widespread dissatisfaction with both. This paper attempts to identify the reasons for that dissatisfaction and to examine their implications for housing policy in the future.

Such an evaluation may be particularly timely since the Reagan administration is proposing a radical departure from the policy approach established for almost half a century. Traditional housing programs have sought to help the poor primarily through subsidized construction of housing specifically for them. These programs can be termed "producer subsidies," because the federal government makes payments directly to housing producers who in turn provide housing to the poor at reduced rents. The government and the producer jointly determine the characteristics of the housing – its location, type, size, amenities, etc. The tenant's choice of housing is restricted to the units produced under the subsidy program.

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In place of this approach, the administration has recommended a system of grants to tenants, who use the funds to find their own housing in the private market. The shift from producer-oriented to consumer-oriented subsidies or "housing allowances" is simultaneously a shift from reliance on new construction to utilization of existing housing, and from the government to the private sector as a provider of housing.

This brief description of the traditional and alternative policy approaches is far from complete, but it may help us to analyze the public attitude toward the programs of the past and the possible effectiveness of the proposed policies.

This paper focuses on the actual and perceived results of housing programs, rather than the fundamental rationale for housing subsidies of any sort. It thus discusses the programs within the policy context that it is appropriate for the government to help poor people live in decent housing. This has been the goal of housing policy for at least three decades and has been accepted by the present administration, which is merely proposing new ways to help meet the goal. The broader philosophic questions of the proper role of government in redistributing income and subsidizing the consumption of particular goods, and the extent to which government activity may actually be contributing to the problems which it attempts to ameliorate, are beyond the scope of this paper. Some of these issues are discussed in other conference papers.[1]

Postwar Trends in Housing Quality

When the public housing program was established in 1937 and expanded in 1949, there was general agreement that many Americans, particularly in the big cities, lived in substandard housing.[2] The Housing Act of 1949 established a "national housing goal" of "a decent home and a suitable living environment for every American family." Although the act did not contain an explicit definition of "decent" – or, for that matter, either "suitable" or "living environment" – a consensus had developed around the notion that a "substandard" house was one that did not have complete plumbing or that was in need of major repairs. The Congressional Joint Committee on Housing used this criterion in attempting to count the number of

[1]See for example Edward S. Banfield, "The Zoning of Enterprise," *Cato Journal* 2 (Fall 1982).

[2]For a more extensive discussion of housing quality trends and perceptions of the trends, see John C. Weicher, *Housing: Federal Policies and Programs* (Washington, D.C.: American Enterprise Institute, 1980), chap. 2.

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substandard units in its 1949 report, and many witnesses had described their local housing problems in terms of the same measures.[3] Through the postwar period, the definition remained unchanged; presidential studies of housing conditions and housing policy in 1967 and 1973 used it, as did most policy analysts. Housing space was another important but subordinate criterion; the most widely used space measure was the ratio of persons to rooms within the unit, with more than 1.5 persons per room being defined as "overcrowded."

Since World War II the country has enjoyed steady, substantial declines in the incidence of all of these undesirable housing conditions, to the point where very few households are now living in housing that would have been considered substandard in 1949. Table 1 shows the changes. By all of these measures, the United States is close to achieving the goal of a decent home, as it was originally conceived. (Some minimum level of inadequate housing remains, and will probably always remain, unaffected by housing policy or economic improvement; about one percent of the stock seems to be a lower bound for any housing deficiency.)

The figures in Table 1 refer to the nation as a whole, not to the cities which are the primary focus of this conference. But the same pattern of improvement has occurred in urban areas, in central cities, and in the large central cities of the Northeast and Midwest. The last category is especially interesting, since it includes the cities which are usually perceived as being the "worst." There were 14 SMSAs with more than one million population throughout the postwar period in the quadrangle bounded by Boston, Washington, St. Louis, and the Twin Cities. Overall and individually, these cities report the same kind of improvement as the rest of the country. For example, the incidence of substandard housing declined from 17 percent in 1950 to less than 4 percent in 1970; overcrowding dropped from 15 to 3 percent. Little substandard housing remains even in these cities.

Actual and Perceived Progress

The virtual achievement of the original national housing goal is a major accomplishment. But it attracts little attention, and indeed the common perception is that we are far from meeting the goal. Why is there so much dissatisfaction, in the face of so much progress?

One reason is that we simply don't know that the goal has been nearly achieved. This is not a facetious explanation. For a variety of reasons, improvements in housing quality have received little atten-

[3] *Housing Study and Investigation: Final Majority Report*, 80th Cong., 1st sess. (Washington, D.C.: Government Printing Office, March 15, 1949), part 1.

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TABLE 1

MEASURES OF HOUSING INADEQUACY, 1950-1976
(Occupied Housing)

Inadequacy	1950	1960	1970	1973	1976	1979
Substandard	35.4%	18.0%	8.9%	N.A.	N.A.	N.A.
Lacking some or all plumbing	34.0%	14.7%	5.5%	3.6%	2.6%	2.4%
Overall physical condition*	9.1%	4.6%	3.7%	N.A.	2.8%	2.5%
Overcrowded (more than 1.5 persons per room)	6.2%	3.8%	2.0%	1.3%	1.0%	0.9%

*"Needing major repairs" in 1940; "Dilapidated" in 1950, 1960, and 1970; "Poor overall structural condition" in 1976 and 1978 (latest data available)
N.A. = Not Available
SOURCES: Census of Housing: 1950, Vol. I, Part I; 1960 Census of Housing, Vol. II, Part I; 1970 Census of Housing, Components of Inventory Change, HD(4)-1; Annual Housing Survey: (various years), United States and Regions, Part B.

tion from the public or from policymakers. It is worthwhile to examine these reasons.

Physical Condition: The Problem of "Dilapidation"

The most basic reason is that we no longer have the same measure of housing quality. Data are still collected on housing units lacking complete plumbing, as they have been since 1940, but not on the overall physical condition of the unit – or at least, not the same data. From 1940 through 1960, census enumerators were asked to assess the housing units that they visited. The Census Bureau provided a number of criteria for classifying a unit as "sound," "deteriorating," or "dilapidated" ("needing major repairs" in 1940), including pictures of homes and apartments in each category, in an attempt to minimize the degree of subjectivity in the responses. Despite these efforts, a post-census evaluation in 1960 showed a high incidence of classification error, with enumerators and evaluators disagreeing over which units were dilapidated.[4] From the standpoint of estimating the total number of substandard units, the error was not overly serious, since a high fraction of the misclassified units lacked complete

[4]U.S. Bureau of the Census, *Measuring the Quality of Housing*, Working Paper no. 25 (Washington, D.C.: U.S. Bureau of the Census, 1967).

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plumbing and were thus substandard, regardless of their overall physical condition. After examining the census evaluation, Frank Kristof estimated that the classification errors resulted in an understatement of substandard units by about 585,000, about 6 percent of the number originally counted as substandard or 1.2 percent of the total occupied housing stock. Kristof concluded that the issue was merely "a tempest in a teapot."[5]

Nevertheless, the Census Bureau decided to discontinue measuring overall housing condition, because it planned to conduct the census by mail in 1970, as well as because of the results of its evaluation. After significant objections, particularly from city governments that relied on the physical condition data, the decision was partially reversed, although the 1970 data were collected in a different way. Instead of a 25 percent sample of the housing stock, a much smaller number of units were surveyed, and the incidence of dilapidation was correlated with the incidence of other characteristics; then the total number of dilapidated units in the country was inferred from the overall incidence of these other characteristics.[6] The resulting numbers for 1970 are probably less reliable than the earlier data, but they are the latest we have, or ever will have, because the question was not asked in the 1980 census. The Census Bureau's decision to discontinue collecting data on overall physical condition has generated some confusion in housing policy, because since 1970 policymakers and analysts have had information for only one component of the quality measure that they are used to.

New Definitions of Housing Quality

As the 1970 census phased out the traditional measure of overall physical condition, new and different information on housing quality began to become available through the Annual Housing Survey (AHS), conducted by the Census Bureau for the Department of Housing and Urban Development, beginning in 1973.[7] The AHS collects far more

[5]Frank S. Kristof, *Urban Housing Needs through the 1980's: An Analysis and Projection*, Research Report no. 10 (Washington, D.C.: National Commission on Urban Problems, 1968), p. 90.

[6]U.S. Bureau of the Census, *1970 Census of Housing, HC(6): Plumbing Facilities and Estimates of Dilapidated Housing* (Washington, D.C.: Government Printing Office, 1973).

[7]U.S. Department of Housing and Urban Development and U.S. Bureau of the Census, *Annual Housing Survey: United States and Regions*, Part B (Washington, D.C.: Government Printing Office, various years). Unless otherwise indicated, data on housing conditions for 1970 and earlier years are taken from the decennial censuses, data for 1973 and later years from the Annual Housing Survey.

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information on housing than has previously been available from any data source, for approximately one of every 1,000 dwelling units in the United States.

Among this information is a new kind of question on general housing quality, in which residents, rather than census enumerators, are asked to rate the structural conditions of their dwellings. In 1978, 2.5 percent considered their housing "poor," compared with 14.6 percent rating it "fair," 43.4 percent "good," and 39.5 percent "excellent." This is the measure used in Table 1 to continue the data series over the postwar period, but it is not necessarily commensurate with the earlier census classification, and it has not been widely used in housing-policy discussions. A case can be made that the subjective evaluation of housing quality by the resident is more valid than an outsider's opinion, no matter how expert.

In addition to the overall physical rating, the AHS collects information on some 30 different specific housing defects, far more than the decennial census. Questions are asked not only about the presence of facilities, but also about their functioning – for example, not only, "Do you have complete plumbing?" but also, "Has it broken down in the last year? If so, how often? For how long?" Similar questions are asked about the heating, electrical, and other major systems of the unit.

A number of analysts have sought to use this data to develop a new definition of substandard housing, in view of the increasing irrelevance of the original one. To date, nobody has been able to formulate a simple criterion that has the obvious intuitive appeal of the traditional definition. Instead, several analysts and federal agencies, including HUD, the Office of Management and Budget, and the Congressional Budget Office, have developed rather complicated criteria.[8] They differ in detail but generally use a similar approach. An example is the most recent HUD definition, shown in Table 2. Defects are grouped into 10 categories, and a criterion for adequacy is established for each category. A housing unit is classified as "inadequate" if it fails to meet the criterion in any category. As can be seen in Table 2, the criteria are rather complex.

According to this definition, the number of occupied inadequate units has been declining during the 1970s, from 11.8 percent in 1973

[8]U.S. Department of Housing and Urban Development, Office of Policy Development and Research, *How Well are We Housed?: 1. Hispanics*, U.S. Department of Housing and Urban Development, September 1978; Jonathan Sunshine, "Preliminary Findings of Section 8 Study," unpublished memorandum, U.S. Office of Management and Budget, October 1977; U.S. Congressional Budget Office, *Federal Housing Policy: Current Programs and Recurring Issues* (Washington, D.C.: Government Printing Office, 1978).

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TABLE 2

DEFICIENCIES WHICH CAUSE A HOUSING UNIT TO BE JUDGED PHYSICALLY INADEQUATE – BASED UPON AHS ITEMS, REVISED DEFINITION (1981)

Type of Deficiency	Description of Deficiency
Plumbing	*Lacks or shares some or all plumbing facilities.* The unit must have hot and cold piped water, a flush toilet, and a bathtub or shower – all inside the structure and for exclusive use of the unit.
	Lacks adequate provision for sewage disposal. The unit must be connected with a public sewer, septic tank, cesspool, or chemical toilet. (Units with this deficiency also are almost invariably defined as having a plumbing deficiency as well.)
	Had breakdown of flush toilet for 6 consecutive hours or longer 3 or more times during last 90 days.
Kitchen	*Lacks or shares some or all kitchen facilities.* The unit must have an installed sink with piped water, a range or cookstove, and a mechanical refrigerator – all inside the structure and for exclusive use of the unit.
Physical Structure	*Has 3 or more of 6 structural problems:* leaking roof; open cracks or holes in interior walls or ceiling; holes in the interior floors; either peeling paint or broken plaster over one square foot of an interior wall; evidence of mice or rats in last 90 days; leaks in basement.
Common Areas	*Has 3 or more of 4 common area problems:* no light fixtures (or no working light fixtures) in common hallway; loose, broken, or missing steps on common stairways inside the structure or attached to it; loose or missing stair railings; no elevator in building (for units two or more floors from main building entrance in buildings four or more stories high).
Heating	*Has unvented room heaters which burn oil or gas.* If unit is heated mainly by room heaters burning gas, oil, or kerosene, the heaters must have flue or vent.

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TABLE 2 (cont.)

DEFICIENCIES WHICH CAUSE A HOUSING UNIT TO BE JUDGED PHYSICALLY INADEQUATE – BASED UPON AHS ITEMS, REVISED DEFINITION (1981)

Type of Deficiency	Description of Deficiency
	Had breakdown of heating equipment for 6 consecutive hours or longer 3 or more times during last winter.
Electrical	*Lacks electricity.*
	Has 3 out of 3 signs of electrical inadequacy: one or more rooms without a working wall outlet; fuses blown or circuit breakers tripped 3 or more times during last 90 days; exposed wiring in house.

SOURCE: John Simonson, "Measuring Inadequate Housing Through the Use of the Annual Housing Survey," U.S. Department of Housing and Urban Development, Office of Policy Development and Research, July 1981.

to 10.1 percent in 1978. This continues the postwar period's record of progress. Alternative definitions show a similar pattern; for example, the most recent CBO standard shows a decline in inadequacy from 8.1 to 7.5 percent of the stock between 1973 and 1977.

Rising Expectations and Redistribution

By any of these newer criteria, there is a greater incidence of "inadequate" housing in the late 1970s than of "substandard" housing in 1970. This clearly implies that the newer measures set a higher quality standard than the traditional one. (There is no reason to believe that an abrupt decline in housing quality occurred between 1970 and 1973, as would be implied if the two measures corresponded.)

In itself the new standard is not necessarily bad. As the society becomes richer, it is possible to seek levels of well-being that formerly seemed beyond reach. In the case of crowding, this process has in fact been going on gradually. The 1949 standard of overcrowding, more than 1.5 persons per room, has been superseded by a ratio of more than 1.0 persons; the latter measure has been used by presidential commissions and studies since 1967. By this yardstick, also, the incidence of overcrowding has been declining sharply – from

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15.8 percent in 1950 to 4.0 percent in 1979 – and in a few years, another ratio, such as 1.0 or more persons, may become the generally accepted minimum level of housing space.

George Stigler has written that "from an Olympian peak, one may say that the economic system has as its purpose forcing people to find new scarcities."[9] The search for new standards of housing quality certainly illustrates his point. The society can always find new wants in housing as elsewhere and thus is never "satisfied" with its housing.

But the new criteria tell us other things besides the fact that we are richer than we used to be. They pose problems of interpretation which emanate from fundamental differences between the traditional and current definitions. It is not very clear what "inadequacy" really means, either for the occupants of the units or for housing policy. It appears that housing units shift easily from "inadequate" to "adequate," and vice versa. The most important category of defects, numerically, under any of the newer criteria, is "maintenance." But defects in this category can be easily repaired in many instances, and in fact the vast majority are.

One of the virtues of the AHS is that it resurveys the same units each year, permitting longitudinal analyses of quality changes. The changes are dramatic: 89 percent of the housing units with leaky roofs in 1974 no longer had the same problem two years later; similarly, repairs had been made in 88 percent of those with broken plaster or peeling paint.[10] The overall incidence of defects declined much less, however, meaning that many units without the problem in 1974 suffered from it in 1976; downgrading was almost as common as upgrading. The HUD definition attempts to take this into account by requiring that a unit suffer from three or more defects simultaneously. That is surely better than counting every home with a leaky roof as "inadequate." But one may still wonder at the validity of a criterion which allows so many units to jump from one category to the other in such a short time.

Stated simply, as housing quality standards rise, they become increasingly arbitrary. Complete plumbing and structural soundness are reasonable minimum standards on health and safety grounds, even if it has apparently been difficult to measure the latter very precisely. But the newer definitions have no such clear-cut rationale, and over time their rationale is likely to become still less clear. Each year, fewer and fewer of the units classified as "inadequate" fall into

[9]George J. Stigler, *The Theory of Price,* rev. ed. (New York: Macmillan Co., 1952), p. 2.

[10]President's Commission on Housing, *Interim Report* (Washington, D.C.: Government Printing Office, October 1981), p. 15.

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that category because they lack basic facilities of any sort; more have problems of system breakdowns or structural maintenance. Such housing is worse than that occupied by the majority of American households, but it is not obviously "bad." The newer standards provide more of an ordinal, less of a cardinal, measure of housing quality. They describe the distribution of housing quality. To the extent that the society is interested in redistribution, such standards can be very useful. The traditional standard also served that purpose, but it served others, probably more important ones, as well.

Expense/Income Ratios

Besides these variations on the original concept of minimally acceptable housing quality, in recent years some totally different types of standards have been developed. For example, instead of physical condition, some analysts have stressed the cost of housing.[11] Typically, cost is measured by a rent/income ratio: drawing on the common rules of thumb among mortgage lenders and family financial planners, a ratio greater than 0.25 is taken as evidence of financial hardship and therefore of a housing problem. Such a ratio is frequently used by mortgage lenders in evaluating loan applications: if the mortgage payment, property taxes, and mortgage insurance (if any) exceed 25 percent of the applicant's income, the application is likely to be rejected. A similar ratio is often used by family financial advisers for renters. Rent/income ratios, of course, by definition refer only to renter households, but until the AHS there were virtually no data on housing expenses for owner/occupants, and thus no corresponding expense/income ratios could be constructed.

Unlike the various measures of physical deficiencies, the overall rent/income ratio and the fraction of renters paying more than 25 percent of their income for rent have been rising steadily over time, from 31 percent in 1950 to 32 percent in 1960, 39 percent in 1970, and 49 percent in 1979. Data for owners is available since 1974 and also shows an increase, but the level is much lower; the fraction rose from 19 percent to 25 percent by 1979. Together, some 36 percent of all households, or 23.0 million, are paying more than 25 percent of their income for housing, far more than the 1.7 million living in units without complete plumbing, the 3.1 million with more than one person per room, or the 7.2 million living in inadequate housing according to the HUD definition.

[11]For example, David Birch et al., *America's Housing Needs: 1970 to 1980* (Cambridge, Mass.: Joint Center for Urban Studies, 1973), pp. 4-4 to 4-6. This report uses a rent/income ratio of 0.35 or more for elderly or single-person households, and 0.25 or more for all other households, to measure "high rent burden."

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The rent/income ratio is simpler and thus may have more intuitive appeal than any index of housing deficiencies; it is increasingly being used in policy discussions. But it is a fundamentally inadequate measure of housing quality. Expenditures on housing are determined simultaneously by supply and demand in housing markets; they may change when either changes. The rising rent/income ratio is usually regarded as evidence of a decrease in supply or a rise in price, and therefore as evidence of a "problem," without reference to the demand side of the market. Rising prices may well affect housing expenditures, of course, but so also may rising incomes or changing tastes among the population.

All of these have in fact been changing over the postwar period. Rents have been rising less rapidly than other prices, while incomes have increased very substantially. Only if both the price and income elasticities of demand are unity would expenditures for housing be expected to remain stable over time, as a share of income. Research on these elasticities suggests that both may be fairly close to unity, or slightly above it. These research findings imply that rent/income ratios should be rising as they have. The declining relative price of rental housing also implies that renters could in fact lower their rent/income ratios and remain in the same quality of housing that they have been occupying. Instead, most renters have apparently chosen to live in better housing.

Over the same period tastes have been changing also, as the age distribution and family structure of the population have changed. In particular, a rising proportion of the elderly have chosen to live apart from their children and families when they retire. The elderly typically have higher expense/income ratios for housing than those of the rest of the population, in part because they are able to finance their current expenditures on housing out of past savings.

Another factor affecting rent/income ratios is the growth of "in-kind" welfare programs in recent years, under which low-income households receive goods, such as food stamps or medical services, rather than money income. These in-kind transfers enable low-income households to spend larger fractions of their cash incomes on the goods that are not subsidized, including housing for the large majority which does not already live in subsidized housing; as a result, they can afford to incur high rent/income ratios.

The expense/income ratio is thus a misleading indicator of housing adequacy. Nonetheless, the growth in its popularity is one of the best indications that we have reached the point where physically substandard housing is so rare that we can no longer usefully measure housing quality in simple physical terms.

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Production Targets

The housing goal has become confused in public discussions with two numerical production targets enunciated by Congress in 1968. The overall target was 26 million new housing units in the next 10 years, 6 million of which were to be constructed for low- and moderate-income households, probably but not explicitly by means of government subsidies. These production targets are frequently referred to as the national housing goals, but in fact the legislation drew a distinction between the 1949 goal, which it reaffirmed, and the production targets, which were to be the means of substantially achieving that goal within the next decade.

Once established, the production targets were soon outdated by changing political attitudes in both Congress and the executive branch of the government. Since at least 1973 these targets have had little impact on policy, and when the original 10-year period expired no new targets were set. But they have received far more attention in discussions of housing policy than the actual goal of "a decent home."

The targets were not reached; in particular, there were only about 2.7 million new or rehabilitated subsidized units, less than half of the target. (By contrast, unsubsidized production amounted to about 18.5 million units, close to the 20 million target.)

This shortfall has contributed to the popular perception of housing conditions. It has largely been forgotten that the original target for low-income housing was based on an estimate in 1968 that there were then about 6.7 million occupied substandard units (lacking complete plumbing and/or dilapidated), and that there would be 6.3 million in 1978 in the absence of new government-subsidized production programs.[12] That 1968 estimate was essentially an educated guess, since the most recent data then available were from the 1970 census. Two years after the target was established, the 1970 census estimated that there were only about 5.3 million occupied substandard units, even though the new federal programs were barely under way; but the target was not updated. Because of the Census Bureau's decision to stop trying to count dilapidated units, we will never know how many substandard units there were in 1978; but the improvement from 1973 to 1978 according to the newer criteria strongly suggests that the number was much smaller than in 1970, even though such an assertion cannot be proven.

[12]G.E. – TEMPO, "United States Housing Needs, 1968–1978," *Report of the President's Committee on Urban Housing, Technical Studies,* vol. 1 (Washington, D.C.: Government Printing Office, 1967), p. 26.

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Other Purposes for Subsidized Housing

The foregoing discussion may lead one to infer that the general dissatisfaction with subsidized housing programs is largely the result of data problems: If we "really" knew what has occurred in the postwar period, we would be satisfied with the housing policy that has given birth to public housing and the later subsidy programs. That is probably not the case. Subsidized housing has been advocated for other reasons than achieving decent housing for all Americans – it has been seen as the "answer" to other "questions." This section briefly describes the most important of these "questions."

Housing Production

Subsidized housing has often been seen as a macroeconomic policy tool, as well as a vehicle for improving the housing conditions of the poor. This emphasis goes back to the earliest days of public housing, during the Depression.[13] The first federal support came through the Reconstruction Finance Corporation and the Public Works Administration as part of the general effort to promote economic recovery. The focus on macroeconomic impact was underscored in 1935 when President Roosevelt rescinded over half the funds for public housing, on the basis that alternative public works provided more jobs in a shorter time. Later subsidy programs, particularly Section 221 in 1961, have been advocated as countercyclical stimuli. More recently, the homebuilders and other groups interested in housing have urged the federal government to "smooth out the housing cycle," using low-income housing as one mechanism among several to achieve this purpose. The 1968 production targets for subsidized housing partly result from a long-standing macroeconomic concern.

Social Benefits

The national housing goal is "a decent home in a suitable living environment," not just a "decent home." Decent housing has traditionally been regarded as a means to achieve better living environments, or neighborhoods. When the first subsidized housing programs were enacted during the Depression, they were advocated by many urban reformers on the basis that bad housing was the cause, or at least a major contributing factor, of many of the social and even physical problems confronting the poor. Tearing down the slums and replacing them with good new housing was expected to reduce crime,

[13]For a more extensive discussion of the use of subsidized housing as a macroeconomic policy tool, see Weicher, chap. 3.

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delinquency, and antisocial behavior generally, and improve the mental and physical health of the poor.[14]

Intrametropolitan Issues

A related public policy concern has been the problem of the "big cities." Inadequate housing has often been regarded as primarily a "big-city" problem, because the concentrations are especially noticeable in many city neighborhoods.[15] In fact, this is not correct: Housing deficiencies are found disproportionately in rural areas, particularly in the South, and central city housing has improved in line with housing quality generally during the postwar period. But in policy discussions, the more common comparison is between cities and their suburbs, and an avowed policy goal has been "strengthening" the cities in relative as well as absolute terms: narrowing the gap between city and suburban economic positions, and stemming the continuing deterioration of the central cities' economic situation vis-à-vis their suburbs. This of course is really an issue of urban, rather than housing, policy, but the two are not clearly distinguished in most policy discussions, or in most policies either. Federal urban programs, beginning with urban renewal in 1949 and continuing to the Urban Development Action Grants of today, have had a substantial housing component, including subsidies ostensibly designed for "moderate" or "middle" income families.

Racial Discrimination and Segregation

Members of racial and ethnic minorities, particularly blacks, have historically lived in much worse housing than the white "Anglo" majority, in neighborhoods apart from the majority. Some 80 percent of nonwhite households lived in housing without complete plumbing in 1940, twice the percentage of whites. And 23 percent of nonwhite households were overcrowded, more than three times the frequency for whites. The extent of racial segregation cannot be simply summarized by any analogous statistics, but surely need not be belabored. Subsidized housing is provided to all eligible households on

[14]For a more extensive discussion of the "social benefits" originally expected from the subsidized production programs, see Milton P. Semer et al., "A Review of Federal Subsidized Housing Programs," *National Housing Policy Review, Housing in the Seventies, Working Papers*, vol. 1 (Washington, D.C.: Government Printing Office, 1976), pp. 82–144.

[15]For a more extensive discussion of intrametropolitan issues in housing policy, see John C. Weicher, "Government Urban Policy and the Lender," *Urban Housing*, Proceedings of the Fourth Annual Conference, Federal Home Loan Bank of San Francisco, 1979, pp. 187–246.

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the same terms. The projects can be integrated themselves, and their sites can be selected in such a way as to promote integration within the neighborhood in which they are located. Support for public housing has been particularly strong among black political leaders, both in and out of Congress.

The Effectiveness of Subsidized Housing

If these are the "questions," is building low-income housing the "answer"? This section evaluates the efficacy of subsidy programs in terms of the various objectives, based on scholarly research and program experience. Before doing so, however, it briefly discusses the way in which the programs are perceived by policymakers. This is not at all the same thing: research and even program experience often have little impact on the latter, particularly when the results are counter-intuitive. The most common "model" in general public discussions of policy issues can be described as simple time-series regression: $y = f(x)$, where y is the desired outcome, x the policy or program, and the observations are for successive time periods. If x is adopted as a policy, and y does not change in the desired way, then the policy is regarded as a failure. This of course commits the logical fallacy of *post hoc, ergo propter hoc* and is not the methodology that policy analysts from any discipline would use, but it is common in Washington.

Using this model, it is no wonder that subsidized housing is unpopular. It hardly needs saying that the economy and the housing industry still suffer from cyclical downturns. Neighborhoods, especially in the big cities, have been getting worse as housing has been improving; crime rates have risen and school quality has deteriorated. Blacks and other minorities continue to live in worse housing than average, and segregation is still the norm, though it should be noted that both discrimination and segregation appear to be much less severe than they were 30 to 50 years ago. And, despite some spectacular improvements in specific city neighborhoods, most big-city economies have continued to lose ground relatively, and in some cases absolutely. In addition, the New York City fiscal crisis of the mid-1970s has added a new dimension to the public perception of central city problems. The near-elimination of substandard housing is the only "success" that can be offset against these "failures."

The professional literature is more rigorous and systematic than this crude "analysis," but its findings are no more favorable to the subsidized production programs. The remainder of this section briefly reviews the relevant research. On many of these issues, it is somewhat surprising to find that there has been very little study. Indeed,

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the paucity of serious research is one reason – but by no means the only reason – for the unsophisticated level of debate about subsidized production.

Housing Quality

The research shortage is most noticeable and most surprising on the question of the role of subsidized housing production in eliminating substandard housing. Since this has been the central objective of federal housing policy with respect to the poor, and since it has nearly been achieved, one might reasonably expect that a number of analysts would have investigated the impact of the programs. At the very least, the government agencies charged with administering the programs should have found it in their self-interest to commission studies which they could expect to demonstrate their accomplishments, particularly when the programs come under fire. But I can identify only two scholarly empirical studies and not many more theoretical analyses.

Most housing market theorists have agreed that public housing clearly results in housing improvement for each poorly-housed family who becomes a program beneficiary. The major point of divergence concerns the indirect impacts on other poor households. Edgar Olsen argues that they are neither helped nor harmed, in the long run, because of the competitive nature of the housing market; landlords will provide housing of the type and quality desired by poor households, at the same cost, whether or not there are public housing projects.[16] However, those displaced by the projects (and perhaps other poor families) may be hurt in the short run. More recently, James Sweeney and James Ohls separately argued that other low-income families probably benefit because the overall demand for private, low-quality housing is reduced, and landlords are forced to lower their rents in order to attract and hold tenants.[17] Sweeney differentiates public housing from the newer mortgage subsidy programs for families above the public housing income limits, such as Section 235 and 236; he argues that the latter are likely to hurt the poorest people.

The first serious empirical study on this question dates only from 1973. Davis, Eastman, and Hua analyzed the improvement in hous-

[16]Edgar O. Olsen, "A Competitive Theory of the Housing Market," *American Economic Review* 54 (September 1969): 612–621.

[17]James L. Sweeney, "A Commodity Hierarchy Model of the Rental Housing Market," *Journal of Urban Economics* 1 (July 1974): 288–323; James C. Ohls, "Public Policy Toward Low Income Housing and Filtering in Housing Markets," *Journal of Urban Economics* 2 (April 1975): 144–171.

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ing quality, measured as the reduction in substandard housing, for a cross-section of 50 large cities during the 1960s.[18] Their work is hampered by the previously mentioned data problems in the 1970 census; they were forced to compare the incidence of substandard housing in 1960 with that of units lacking complete plumbing in 1970, because they did not have data on the number of dilapidated units in the latter year. They also compared the change in the proportion of units lacking complete plumbing. They did not have a direct measure of subsidized housing production during the decade, but used instead the fraction of the 1970 housing stock consisting of units built during the 1960s and renting for less than $80 per month.

Their results are ambiguous, but do not provide much support for the notion that subsidized production contributed to the improvement in housing quality. They regressed the first, less commensurable measure of housing improvement against new low-rent housing and the 1960 incidence of substandard housing; the subsidized production variable was barely conventionally significant. In a similar regression for the change in housing without complete plumbing, however, the variable was insignificant, with a t-ratio of about 0.5; it remained insignificant in more elaborate formulations, containing up to 11 economic and demographic variables, primarily measures of household income, and of the level, composition, and change in city employment.

Within the last few years I and several associates have studied the relationship between subsidized production and substandard housing, as part of "housing needs" projections undertaken for HUD and the Congressional Budget Office.[19] We have data on subsidized production, taken from HUD program records and the Annual Housing Survey, but we do not have a consistent measure of substandard housing for our study period, and we can only relate subsidized production over a several-year period (the early 1970s) to substandard housing at the end of that period (1974, 1975, or 1976). Our sample is the 60 selected SMSAs of the Annual Housing Survey.

The most important factors affecting the incidence of substandard housing are income, household composition and other demographic characteristics, and the relationship between private new construction and net new household formation. Subsidized production gen-

[18]Otto A. Davis, Charles M. Eastman, and Chan-I Hua, "The Shrinkage in the Stock of Low-Quality Housing in the Central City: An Empirical Study of the U.S. Experience over the Last Ten Years," *Urban Studies* 11 (February 1974): 13–26.

[19]John C. Weicher, Lorene Yap, and Mary S. Jones, *Metropolitan Housing Needs for the 1980s* (Washington, D.C.: Urban Institute Press, 1981), pp. 109–113.

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erally has much less impact, but its importance varies according to the definition of inadequate housing. Using a definition developed by HUD in the later 1970s, we find that subsidized housing production does not have a significant effect on the incidence of substandard housing. The coefficient is slightly larger than its standard error, and the point estimate of the coefficient implies that there is about one fewer substandard unit in the mid-1970s for each four subsidized units built during the early 1970s. We were able to separate public housing from the mortgage subsidy programs; the impact of public housing was essentially the same as that of all subsidized housing production, while the other programs had no effect at all. These results suggest that it is useful to differentiate housing programs, as Sweeney does, but they are at best only partly consistent with his model.

But in a subsequent analysis using a definition of "housing in need of rehabilitation" devised by the Congressional Budget Office, we get different results, although the definition does not seem to be very different on the surface.[20] The coefficient of subsidized production is significant, and the point estimate implies that there are six fewer substandard units in the mid-1970s for every seven subsidized units built during the preceding five years. This is the strongest result in any attempt to analyze the relationship.

It may seem surprising that the coefficients are all less than unity, although in the CBO analysis, not significantly less. There are several explanations. The simplest is that not all public housing tenants come from substandard housing. HUD program data indicate that only about half have done so. Moreover, the HUD program definition of "substandard" is not the traditional policy definition, but a rather elastic, even vague, notion based on local housing codes and the perception of the tenant. It seems clear that the program data overstate the extent to which subsidized housing replaces substandard units.

A second possibility is that there may well be a difference between the short- and long-run impacts of subsidized production, as hypothesized by the various theoretical analyses. To investigate this possibility, we included past levels of subsidized production, as well as current ones. Our results were surprising. For either the HUD or CBO definitions, we found that production five to ten years earlier had no impact on substandard housing in the mid-1970s, and production 10 to 15 years earlier had, if anything, an adverse impact. We were unable to account for this, but it may be the result of peculiar-

[20]Ibid., pp. 113–117.

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ities in the definitions of inadequacy, which all give substantial weight to maintenance items (public housing maintenance has become an increasing problem in the last decade or so). Whatever the interpretation of this result, our findings generally indicate no long-run reduction in substandard housing as a result of subsidized production. This is hardly the last word on the subject – it is more nearly the first – but it certainly indicates that there is much more to be done in studying the housing market. Its potential policy implications will be discussed in the concluding section of this paper.

Housing Production

The countercyclical impact of subsidized housing programs is also a topic which has attracted little serious research. There have apparently been only two studies, both concluding that the impact is small or negligible, primarily because subsidized production is in large part a substitute for unsubsidized production that would probably have occurred anyway. Craig Swan has estimated that about 85 percent of the starts under the Section 235 and 236 interest rate subsidy programs between 1969 and 1972 would have occurred without the program. Swan argues that mortgage interest rates were driven up by the programs, reducing unsubsidized starts as private buyers chose to wait for lower rates.[21] This conclusion has been reaffirmed in a more recent study by Michael Murray.[22]

The conclusions of Swan and Murray with respect to Sections 235 and 236 are especially noteworthy because these programs are often credited with having cushioned the cyclical downturn in 1970. There have been no similar studies of other programs and other recessions, but the raw data alone indicate that any impact would have been negligible: the programs were small, and they produced little housing during the recovery. For example, in 1961 the government began to subsidize interest rates on mortgages for privately owned low-income apartment projects (the Section 221(d)(3) program) during, and partly because of, a recession in housing. The industry recovered without significant help from the program, however: subsidized production did not reach 10,000 starts a year until 1964, while overall production rose from 1.25 million starts in 1960 to 1.60 million in 1963, the third highest yearly total recorded at that time. Similarly, the Section 8 new construction program was enacted in 1974, just

[21]Craig Swan, "Housing Subsidies and Housing Starts," *American Real Estate and Urban Economics Association Journal* 1 (Fall 1973): 119–140.

[22]Michael P. Murray, "Subsidized and Unsubsidized Housing Starts, 1961–1977," U.S. Department of Housing and Urban Development, August 1979.

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before the trough of the recession in housing; however, overall production doubled, going from a rate of 1.0 million starts annually at the low point to more than 2.0 million in mid-1977, before Section 8 had resulted in 125,000 starts.

Housing industry trade groups are clearly aware of this record, though it would be too much to imply that they have been influenced by anything as academic and counter-intuitive as the Swan and Murray studies. But in the last two recessions the industry has argued for interest rate subsidies on conventional new homes and apartments for middle- and upper-income families, not public housing or other subsidies for the poor.

However, Murray also examined public housing and other construction financed directly by the government, apart from the interest rate subsidies, and found a different pattern. About 60 percent of the public housing units represented an increment to housing production at the time they were built. Over time, this impact has dissipated, because the public housing units generate an increase in the overall vacancy rate and thereby reduce the demand for private housing; ultimately, about one-sixth of the public housing units represent an increase in the stock, although it takes many years for the initial increase in production to be absorbed in the market.

Murray's results suggest that public housing ought to be an effective countercyclical program: it adds to the stock of housing "now," in a recession, and restrains production "later," in a boom. But in fact public housing has been regarded as a rather poor macroeconomic policy tool, for the same reason that President Roosevelt gave in 1935: it takes too long. Public housing projects have typically required about a year of federal processing before site acquisition can begin, and another year until construction is underway. That is far too long to be effective in any recent cyclical downturn.

Social Benefits

The social benefits and neighborhood effects of better housing is the one subject where there is a very large body of scholarly research, from the perspective of a number of disciplines. There is little evidence in that body of research that better housing has any of the desirable effects that the original public housing advocates expected.

The effect of housing on health has probably attracted more research attention than any other category of social benefits. In the most exhaustive recent evaluation of this research, Stanislav Kasl reviewed 178 studies in the fields of public health, medicine, and social psychology, and concluded that:

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> . . . the link between parameters of housing and indices of physical health has not been well supported by the reviewed evidence, at least not in any direct sense . . . the relationship between housing and chronic conditions and disability is not at present supported by any firm evidence . . . the association between housing and mental health (excluding housing satisfaction) is supported only by the weakest, most ambiguous studies. . . . The best designed studies do not demonstrate any mental health benefits, and it now appears that some of our most cherished hopes – such as raising educational and occupational aspirations by moving people out of slums – never will be realized.[23]

Kasl's conclusion was not entirely negative. He cited a number of studies showing that people are more satisfied when they live in better housing, which may contribute to their mental health; and noted that there are some "obvious" relationships, such as the presence of rodents and a higher probability of rodent bites, or the lead-based paint commonly found in older buildings and the incidence of poisoning. But he found little basis for the argument that better housing leads to better health. These studies largely refer to housing in general, not the subsidized housing produced by the federal government specifically for the poor.

There is still less evidence that any of these programs have specifically improved the health of their beneficiaries. Probably the best known and most systematic evaluation is a longitudinal study of public housing tenants in Baltimore, conducted by Daniel Wilner and his associates at Johns Hopkins University.[24] They compared the tenants with a similar control group living in private housing over a three-year period that spanned the move from substandard housing to the housing project. The results were mixed and did not systematically favor either group. Disease rates for persons under 35, and especially for children, were significantly reduced in the project, but those for older persons were not, and there was no difference in death rates. Even the statistically significant differences were quantitatively minor.

Studies of the relationship between housing and crime or delinquency have yielded similar results. An analysis by Bernard Lander shortly after World War II exemplifies the literature: He found that bad housing and delinquency were strongly correlated – until edu-

[23]Stanislav V. Kasl, "Effects of Housing on Mental and Physical Health," *National Housing Policy Review, Housing in the Seventies, Working Papers*, vol. 1 (Washington, D.C.: Government Printing Office, 1976), pp. 286–304. The quotation is from p. 296.

[24]Daniel M. Wilner et al., *The Housing Environment and Family Life* (Baltimore, Md.: Johns Hopkins University Press, 1962).

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cation and race were taken into account, when the relationship disappeared.[25] Lander's study was one of the first to attempt to separate the effect of housing from those of socioeconomic and demographic factors; previous studies, particularly before World War II, tended to focus only on the simple correlation between housing and crime or delinquency.

Most economists and other analysts who have reviewed this literature have found little support for the view that better housing helps to solve social and physical problems. At the same time, housing practitioners have been reaching similar conclusions as a result of their personal experiences with subsidized housing projects. By the late 1950s, it was increasingly recognized that many public housing projects were not providing a satisfactory living environment; by 1961 Jane Jacobs could refer matter-of-factly to "low-income projects that have become worse centers of delinquency, vandalism, and social hopelessness than the slums they were supposed to replace."[26] By 1968 the Douglas Commission, which strongly supported subsidized housing programs, devoted much of a chapter to the negative impact of "multiproblem families" in public housing projects.[27]

Later programs, particularly Section 8 New Construction, have shifted from providing housing for these families toward serving the low-income elderly. The latter are generally regarded as desirable tenants because their major problem is their income; they do not suffer from social and psychological problems which create an undesirable living environment in the project. At present it is rare, though not unheard of, to hear the social benefits of better housing invoked as a justification for subsidized production programs.

Racial Segregation

Subsidized housing programs do not have a very impressive track record as vehicles for promoting racial integration. This is partly because, for many years, integration was in fact not really a goal of the programs. The location of public housing projects traditionally followed local racial boundaries: projects designed for blacks were located in black neighborhoods; those intended for whites, in white ones. Occasional integration within projects, or between project and

[25]Bernard Lander, *Toward an Understanding of Juvenile Delinquency* (New York: Columbia University Press, 1954).

[26]Jane Jacobs, *The Death and Life of Great American Cities* (New York: Random House, 1961), p. 4.

[27]National Commission on Urban Problems, *Building the American City* (New York: Praeger, 1969), part II, chap. 3, especially pp. 123–131.

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neighborhood, sometimes resulted in racial tension and even violence.

Within the last 10 to 20 years there have been a number of policy changes for the purpose of promoting integration, and a number of court cases challenging the project site selection criteria of local zoning ordinances. (The latter may have contributed to the former, but they are not the only reason; both reflect a change in the social and political climate of the country.)

At the same time, there have been various efforts to study the impact of subsidized housing production on segregation and residential location patterns generally. Attention has focussed on the Section 8 New Construction program, which since 1974 has supplanted traditional public housing as the main subsidized production program.[28]

It appears that this program has not been particularly successful in promoting integration or serving minority households. Most projects have been located in low-minority, suburban areas and have served few minority households relative to their proportions in the eligible population. Instead, the program has concentrated on serving white elderly households. Minority households represent about 15 percent of subsidized tenants, compared with 35 percent of eligible households. But for the small number of minority households actually served by the program, their new housing is typically in a much more integrated neighborhood than their old: on average the original neighborhoods were 54 percent minority in population, while their new neighborhoods were only 35 percent minority.

These findings suggest that the subsidized production programs work like a lottery. A small number of minority households "win" a big change in their neighborhood; most get nothing at all. This may represent some sort of improvement from the 1940s and 1950s, but it hardly indicates that subsidized production, even today, is a very effective way to promote racial integration, or to help poor minority households find better housing.

The Administration Program

The policy proposals of the Reagan administration, as set forth in the 1983 budget and the report of the President's Commission on Housing, represent a major break from the programs of the past.[29]

[28]President's Commission, *Interim Report*, pp. 38–40.

[29]*FY 1983 Budget, U.S. Department of Housing and Urban Development, Summary, February 1982*, "Introduction," and "Housing" sections; *The Report of the President's Commission on Housing* (Washington, D.C.: Government Printing Office, 1982), section 1.

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The administration would rely on the existing stock to house the poor. It would permit low-income households to choose where they live, as long as their chosen dwelling meets minimum housing quality standards or can be made to meet them. Households could choose to stay in their present unit, if it meets this criterion. The amount of the subsidy is based on the "fair market rent" for modest but decent housing in the local market, and on the household's income; the household is expected to contribute 30 percent of its income toward the rent, and the government pays the rest. The household can also choose to occupy a unit renting for more than the "fair market rent," but if it does so, it must meet the additional cost from its own resources.

Critics of the proposed policy have offered four major objections:

1. It does not help people living in the worst quality housing; they won't participate in the program.
2. It does not add to the stock of housing.
3. It does not help minorities who suffer from discrimination and segregation in the housing market.
4. It simply drives up rents for all housing occupied by the poor.

This is not an appropriate place to evaluate each of these objections. There is a very large body of research and program data about the effects of housing allowances – much larger than has been available to policymakers for any previous low-income housing program or policy when it was first established. Several extensive discussions and summaries of that experience also exist. My own conclusion is that the first two criticisms are more or less true – the second more than the first – and the last two are clearly wrong. But what is more important is that the same criticisms – at least the first three – could be made of the present policies and programs, according to the available evidence. Much of that evidence is counter-intuitive, and there is obviously room for a great deal of further investigation; many of the findings might be reversed in the future. However, there is still very little evidence to suggest that these are areas in which public housing and other subsidized production programs are clearly superior to housing allowances.

The Questions of the Future

At this writing, it appears more likely than not that the administration's proposal will become the nation's low-income housing policy. It seems fitting to conclude by considering what that policy can be expected to achieve and how it will be perceived.

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The first question is the easier one. Past research suggests that housing allowances will result in modest upgrading for housing that is already close to whatever minimum quality level is set in the program – units which might be termed "high substandard." It will neither promote nor discourage racial integration, and minority households will participate roughly in proportion to their importance within the eligible population. It will have no particular impact on neighborhood environments, nor will it make central cities more or less desirable places to live or work.

The perceptual question is more complicated. My basic view is perhaps cynical: The program will get credit for the "good things" that happen in housing after it has been enacted, and blame for the "bad things." This is consistent with the *post hoc, ergo propter hoc* "model" to which I referred earlier. The most important phenomenon will be the change in housing quality that occurs after the program has been enacted. The program's actual contribution to this improvement will be slight, compared with the total improvement that is observed. That improvement will result primarily from continued increases in real income; over a decade or two, continued growth in the economy will dominate all other factors affecting quality. The complaint that those in the worst housing are not helped by housing allowances will gradually fade away, true or not, because the worst housing will continue to drop out of the stock, or be upgraded.

Critics of the program may argue strongly that progress would be faster if low-income housing were built by the government, but this argument will gradually lose its force. I should add, however, a cautionary note: if federal budget stringencies result in further reduction in housing data collection, and deterioration in data quality, the nation may be even less aware of quality improvements in the future than it has been in the past, and policy discussions will become even more confused.

But on most of the other issues discussed in this paper, progress will be less noticeable. The country will not be able to eliminate housing construction cycles, although the financial deregulation now under way should ultimately mitigate them significantly. Crime, schools, and other aspects of our living environment will continue to be "problems," and suburbanization of economic activity will probably continue.

How then will housing allowances be perceived? The answer, I think, depends on whether the new policy is expected to resolve these problems; whether the same "questions" are asked of low-income housing policy. If they are, then the nation will be dissatisfied

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with consumer-oriented housing subsidies, as it has been with subsidized production.

But there is a difference which may be decisive. Advocates of housing allowances seldom claim that these other problems will be solved. A shift in policy therefore may also result in a major shift in policy discussion. We will ask fewer questions of low-income housing policy and be satisfied if it appears to be answering, successfully, the "basic" question of housing quality. We will have an answer, because we will have decided what the question is.

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"PLASTIC LAND" IN THE POST-INDUSTRIAL ERA

Donald A. Hicks

In a narrow sense, this paper has a dual focus – land and the settlement form generally referred to as the "city." My specific concern is their relationship to each other and to the structural changes that define the transformation of the larger economy. Land at base is a production factor whose significance to economic activity is widely recognized. The city at base is a collection of land uses of relatively recent origin, resulting from the expanding capacity to produce a surplus and causing innumerable changes in the larger urban economy and society. In a broader sense, this paper will attempt to rescue both land and the city from the grips of a conventional wisdom that views their characteristics as fixed and their influence as static.

Particularly at a time of major structural change in the economy, both land and the city can be expected to be responsive to the changes that envelop them. In that sense, both are dynamic and even "plastic" in their influence, uses, and significance. Yet, both are at the center of political arrangements which mightily resist both the direction and the pace with which each is being redefined as we exit the industrial era and enter the post-industrial era. A wide variety of perceptions of land and regulations of its uses which have accumulated through the past half century are likely to be rendered irrelevant at best and harmful at worst for the decades ahead. Particularly foreboding are widely held conceptions of the "intrinsic" worth of cities as they are presently constituted and land parcels as they are presently used. Such conceptions breed rigidity and hamper the flexibility with which cities and patterns of land use adjust to the transfor-

Cato Journal, Vol. 2, No. 2 (Fall 1982). Copyright © Cato Institute. All rights reserved.
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mation of the demography, technological capacities, and the larger economy.

Similarly, many national and subnational urban and economic policies reflect our inability to let go of increasingly inappropriate settlement arrangements and limit our ability to recognize the advantages of the alternatives that are slowly evolving in their stead. Accordingly, this paper seeks to deflate some of today's rampant romanticism as we witness the continuing transformation of the urban-industrial arrangements that have prevailed since the mid-19th century. As with all processes which look orderly and predictable, we easily forget the interrelatedness of change among the major sectors of our economy and society. This has been particularly true during the past half century of pervasive and persistent government intervention. The changing form and functions of our cities, like the "career" of varied land uses, reveal a flexibility best noted on an economic and technological timeline. And while politically seductive, it may be unwise to intervene indiscriminately in processes that continue to serve us remarkably well. Where results fall short of our expectations – as is perennially the case with the spatial and social distribution of disadvantage – our interventions might better flow from society's capacity to generate wealth rather than risk stifling wealth. Settlement and land use patterns were remarkably sensitive barometers of our gradual passage from an agrarian era into an industrial one. And it is highly likely that they will continue to serve that function as we exit the urban-industrial arrangements to which we have grown so accustomed.

A Half Century Into the Interventionist Era

While we may be unwitting and unwilling participants in the major structural changes that continuously shape and reshape the demographic and economic bases of our settlements and the spaces between them, the standards by which we evaluate these changes often illustrate powerful political and cultural influences. Our problems, along with the policies, programs, and regulations that constitute our responses to them, often tell us more about the social construction ofreality than about the material conditions and circumstances themselves.

From a political economy perspective, we consider how tinkering with the orderly processes of market forces, political power, demographic change, technological development, and cultural beliefs might alter their outcomes. The growth of the money supply, budget discipline, reapportionment, mandatory retirement legislation, research and development subsidies, and public health programs are exam-

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ples of sectors which are considered vulnerable to manipulation. Rejecting the "blind" outcomes of the "deus ex machina" workings of the economy, demography, and other social systems, we have increasingly attempted to harness the "machina" and specify the "deus" to meet our changing requirements.

The post-Depression era in the United States has been characterized above all by a growing confidence in our systemic understanding of the world around us which has inspired us to attempt to alter undesirable circumstances and outcomes. For this reason, we may well regard this past half century as the Interventionist Era. During this period few categorical groups of our population, areal portions of our territory, structural features of our economy, or processual features of our culture and its institutions have escaped efforts to intervene and so rewire the system more to our liking. Poverty, inflation, fiscal distress, low productivity, job discrimination, regional underdevelopment, and environmental degradation are a few of the conditions we have sought to alleviate through government intervention.

This has been especially true for "urban" circumstances. Over the past half century since the city first became the target of explicit public policy intervention,[1] we have witnessed countless efforts to improve the mesh between specific people and specific places. Urban renewal, manpower training, local economic development, annexation, metropolitan consolidation, growth controls, minimum wage legislation, and targeted procurement all represent efforts to gain some control over the form and function of our human settlements. Even the essentially local nature of zoning has been diminished by its universality, since 98 percent of all communities over 10,000 have some sort of zoning provision.[2] And yet, the changes in settlement form and function during the past five decades have probably occurred less because of than in spite of our concerted efforts. It is to these patterns of change and the ways in which we define and use land and space in urban America that we now turn.

"Plastic" Land and the "Plastic" City: The Dynamic Duo

Without a long-range perspective, one can be excused from even noticing, much less appreciating, the essential malleability of both

[1]R. B. Miller, "The Federal Role in Cities: The New Deal Years," *Commentary* (Washington, D.C.: National Council for Urban Economic Development, July 1979), p. 110.

[2]Peter Wolf, *Land In America: Its Value, Use and Control* (New York: Pantheon, 1981), p. 140.

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land and the city. Together with labor and capital, the role of land as a production factor in an economic system is thought to be reasonably well understood. Yet, land is a far more complex and multifaceted concept than is often suggested by a simple review of the conspiracy of production factors which determine a society's capacity to produce wealth. Land may be seen as having a "career," defined by a sequence of roles and uses, definitions, and limitations on its use. Likewise, the city moves through a series of stages, each of which reflects the physical and political limitations placed on it during periods of expansion and growth.[3] However, what appears as the succession of land uses and the lifestages of a city may be misleading. In fact, it is the larger economy that evolves via demographic and technological developments; changing land use and settlement patterns merely reflect these underlying forces and do not dictate basic economic change.[4]

Throughout most of history, land has been viewed as an *active* determinant of the fate of humans and their settlements. Some land could sustain an ecosystem that had room for man; other land could not. Land was valued and evaluated accordingly. It was that simple. Such a view long reinforced the valuation of land in terms of its natural endowments. As we left the agrarian era a century and a half ago – let us designate the Industrial Revolution as the beginning of that passage – the more dynamic aspects of land began to appear. As man mastered his environment, social and economic life were organized in greater size, density, scale, and permanence. New and different demands were made on land, and its determinative capacity was gradually blunted. Land has thus come to be seen as a more *passive* register of major economic and demographic changes and technological developments. This shift mirrors our nation's passage into and out of the industrial era. Land is continuously being redefined – its social significance and economic value the product of social creation rather than natural inheritance.

The Good Earth: From Sheaves to Spindletop

In the conventional three-dimensional sense, land is a stage across which are displayed the scales and densities of organized social and

[3]R. D. Norton, *City Life Cycles and American Urban Policy* (New York: Academic Press, 1979), chap. 1.

[4]D. A. Hicks, "National Urban Land Policy: Facing the Inevitability of City and Regional Evolution," in George Lefcoe, ed., *Urban Land Policy for the Reagan Years: The Message for State and Local Governments* (Lexington, Mass.: Lexington Books, forthcoming).

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economic life. Time reveals the pace and patterns with which settlements, the economy, and demography are restructured and redistributed. Land is significant to these economic and settlement realignments because of its relationship to each of the various sectors of the national economy that have experienced differential rates of growth during the 20th century. It has been necessary to re-evaluate and redefine land as the economy has slowly evolved and passed into and out of the industrial era.

Prior to the Industrial Revolution, there was an intimate and obvious dependence on the "natural" features of land. Land was the dominant production factor in agriculture, mining, forestry, and even fishing. Food and fiber production along with livestock production depended directly on the basic composition of the soil and its exposure to sunlight, proximity to rainfall and water flow, and other natural factors that together determined the value of the land. For later activities, such as coal and other mining, a certain kind of land was necessary as well.

The primary sector defined land in terms of the presence of these endowments. Land was viewed as a storehouse of treasures such as topsoil above the ground and valuable resources underground. Many of these endowments were casually, if erroneously, judged to be of obvious and intrinsic worth. Over the long-term this primary sector in the nation's economy shrank as it succeeded in assimilating a flurry of technological advances which accounted for high productivity along with the progressive substitution of capital for labor. That the agriculture sector grew smaller by using less labor is viewed as a sign of its success; the productive importance of this sector grew as its employment capacity shrank.[5]

As the Industrial Revolution took hold, it left an indelible imprint on the national economy. Perhaps more noticeable than its impact on the emerging secondary sector of the economy – including manufacturing and construction – was its impact on the primary sector itself. The storehouse conception of land became elaborated to include ingredients whose value was less intrinsic than invented. The view of land was expanded to embrace its role as a mystery box of ingredients whose value awaited "discovery" and complicity in some innovation or growing economic demand.

All kinds of minerals, including petroleum and its byproducts such as natural gas, were given a value in the wake of technological inno-

[5]Glenn V. Fuguitt and Paul R. Voss, *Growth and Change in Rural America* (Washington, D.C.: Urban Land Institute, 1979), p. 17.

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vations in recovery and processing techniques, and transportation, as well as related economic changes that determined price. For those who would recognize it, land began to display a startling flexibility. The collective activities of people in organized social life began to create value in the extractive sector of the economy, and that value accrued to the land as well. Land long judged worthless by traditional criteria soared in value to reflect its newly discovered potential.

The enhanced value of land in the extractive sector registered earth-shattering developments occasioned in this sector as the industrial era emerged out of the agrarian era. Changing-scale economies and production techniques brought about largely by technological advances usurped biological attributes with geological ones. In the area of mineral extraction, such as uranium mining, and oil and natural gas production, the Industrial Revolution was underway a half century or more before it led to a re-evaluation of land's hidden resources.

The transformation of the primary sector of the economy just prior to and during the Industrial Revolution provides lessons about the plasticity of land. In particular, people began to see that land, in and of itself, has little or no intrinsic value; rather, its value reflects the value consumers attach to its potential uses. Agriculture has evolved to the point that it depends less on traditional conceptions of land and less on specific ingredients or attributes of the land. The gradual liberation of land from its physical, chemical, and even locational dimensions and endowments through such advances as irrigation, photosynthetic enhancement, fertilization, and hydroponics, to name a few, is an ongoing development. Yet, the initiatives of the Interventionist Era may well hinder and distort rather than facilitate this process.

Land as Location: Access, Proximity and the Industrial Sector

During the industrial era, the extraction of things of value from land, which defined the primary sector, was accompanied and soon surpassed by the fashioning of finished products from raw materials (i.e., manufacturing and construction), which is the essence of the secondary sector. The productive capacity of the national economy gradually left the farm and moved into the factory. The relevance and significance of land expanded from that of direct dependence on its inherent and ascribed physical, biological, and geological features to the more indirect and tenuous dimension of location or proximity to the natural resources required by industrial processes.

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It is no accident, then, that the Northeast and North Central regions became the "industrial heartland." Shipbuilding, automobile production, steel production, and ancillary industries such as glass and rubber production needed ready access primarily to specific raw materials and secondarily to each other. Proximity to iron ore, coal, water for industrial uses, and transportation of raw materials and finished products, as well as labor pools and mass markets, dictated the patterns of urbanization and city-building that unfolded hand-in-glove with these industries. The secondary sector further expanded the ways of determining land's value. Increasingly, land could be evaluated in terms of its locational attributes – its capacity to offer proximity and access to related activities. As a result, the industrial hierarchy of settlements became more distinct and the division of labor among them better defined than any previous agrarian hierarchy of places was able to be or needed to be. All manner of technological developments allowed and required concentrations of population. Urbanization – a revolution in patterns of land use – was a necessary accompaniment to industrialization given the technological era in which each unfolded.

Yet, the superiority of these arrangements endured for less than a century. As we know, first population and later economic activity (e.g., jobs, capital, market demand) began to spread out from the compact arrangements of the industrial era.[6] So, both the economy and the demography were freed not only from the land itself but even from specific locations. Certainly, not all economic activities or households joined in this outward trek. However, living and working in compact arrangements became more and more a matter of choice.

Land, Location and Place in the Service Sector: The Grip Loosens

In the post-World War II era, old-line manufacturing as a mainstay of the secondary sector continued to grow, but at an ever slower rate. The 20th-century hegemony of the secondary sector was slowly being overtaken by the rapid expansion of the service sector. During this time, manufacturing output nearly tripled, and even though 1980 saw approximately 20 percent of the labor force engaged in manufacturing, the postwar years saw only a one-third increase in employment.[7] Further, the transformation of the larger national economy in the

[6]Brian J. L. Berry and Lester P. Silverman, eds., *Population Distribution and Public Policy* (Washington, D.C.: National Academy of Sciences, 1980).

[7]"America's Restructured Economy," *Business Week,* June 1, 1981, pp. 55–100.

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context of an increasingly competitive international economy was accompanied by new employment growth centers, in a structural and spatial sense, as well as a geographical one. Since 1975, 90 percent of the new job growth has been in the service sector,[8] while the bulk of new manufacturing growth has been in the South and West.

A wide variety of new manufacturing activities utilizing technological advances in production techniques, telecommunications, new materials, transportation, storage, and marketing, grew up in areas outside the industrial heartland such as the West, the South, and nonmetropolitan areas across the nation. The subsectors which exhibited the greatest growth by midcentury where those which were derivative from more recent technological advances in such fields as aviation, electronics, computers and microprocessors, genetic engineering, and related "hi-tech" areas. This new science-based manufacturing activity required seedbeds for innovation such as centers of research and development at or near major universities; yet, the locational requirements for the critical manufacturing processes grew ever less demanding. Despite the rise of centers of high-tech manufacturing activity in such places as the Silicon Valley in California, the Silicon Prairie in north central Texas, and the Route 128 cluster outside Boston, no unified new industrial heartland emerged on the scale and structure of the older one. This cluster of secondary economy subsectors illustrated the increasing ability of production to take place nearly anywhere, not just in narrowly defined locations.

The relatively slow rise of the tertiary or service sector, together with the structural changes transforming the secondary sector, has resulted in economic activity which is ever less dependent not only on land itself, but also on location in terms of nearness. This is the first era that gives meaning to the growing recognition of the historical decline of the significance of location. Despite the continued importance of manufacturing and the industrial sector at large, the service sector has shown that it can serve as the backbone of local and extralocal economies rather than simply be an adjunct to the secondary sector.[9]

The service sector, which brings together a wide variety of enterprises, is also extremely adaptable to a wide variety of settings and locations. Indeed, the hallmark of the national economy during the past quarter of a century has been its increasing insensitivity to

[8]Lora S. Collins, "The Service Sector," *Across the Board*, November 1980, pp. 17–22.
[9]Larry Hirschhorn, "The Urban Crisis: A Post-Industrial Perspective," *Journal of Regional Science* vol. 9, no. 1 (1979): 109–118.

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location in the traditional sense. Certainly, such activities as public (e.g., governmental activities) and quasipublic (e.g., associational activities) as well as the FIRE (i.e., finance, insurance, and real estate) services will continue to find that their "value" is often enhanced, if not actually created, by their location. Still, a wide variety of personal services, leisure-time enterprises, health, education, business, and professional activities have found that they thrive in symbiosis with, if relatively independent of, other economic activities regardless of their structural or spatial location.

In a very real sense no sector per se was immune from the restructuring that afflicted the larger economy; no industry was immune from the abrupt shocks (e.g., relative rise in energy prices) and more subtle technological changes (e.g., computer-assisted design and manufacturing) affecting countless production processes. The rise of the tertiary sector – and the inroads made by the quaternary sector (i.e., administration and control of information exchange) – signal the decline of the governing circumstances that favored the secondary sector and the rise of new conditions that shift advantage and opportunity to new components (e.g., science and hi-tech based) of older sectors as well as to entirely new sectors. The shifting constraints that govern production signal our exit from the industrial era as we have known it and our entry into whatever follows. This relaxation of spatial requirements promises to render traditional conceptions of land, and now location, nearly unrecognizable. The transformation within and between sectors of the national economy has untied and dissolved the bonds of location, just as it previously undid the ties to land itself.

The implications for our traditional arrangement of urban places are significant. Tied through the industrial era to specific locations and defended by political arrangements which lack spatial flexibility, our settlements face changes which have produced much pain and consternation. It is here that the interventionist impulse, also the product of the late industrial years, has been most notably evident. During the past quarter century it has served urban and economic policies whose direct or indirect purpose has been to restrain, if not redirect, the spatial implications of the restructuring economy and demography. As the industrial era, which defined so deliberately the forms and functions of her urban-industrial settlements, recedes, consequent and subsequent changes in both may be as necessary and unavoidable as they are difficult. Moreover, our nation's passage into the post-industrial era may require painful redefinitions of the arrangements that are now made possible by the restructured economy and redistributed settlement patterns.

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Throughout the Interventionist Era, we have seen deconcentration processes unfold on several spatial scales. Vexatious land-related issues have accumulated in their wake. Judged by increasingly outmoded and perhaps irrelevant standards, such matters as the growing amount of vacant land in central cities (approaching 20 to 25 percent in many metropolitan core cities)[10] arouse policy concern, despite the fact that roughly 90 percent of the average metropolitan area is devoted to other than urban uses such as cropland, woodland, and pasture.[11] Likewise, pervasive support for single-use zoning is blind to the increased likelihood that the criterion of "incompatibility" which governed zoning for more than a half century may today sustain a form of land regulation that is poorly suited to the structural and spatial redevelopment possibilities of tomorrow's metropolitan areas.

And again, lower density "sprawl" development and urban encroachment on rural lands invite incessant attacks despite the lack of compelling empirical evidence to support any one specific urban form. There is, however, growing support for higher density development regardless of how dispersed or compact a settlement may be.[12]

Sentiment and public policy guided by the thinking of the Interventionist Era aim to slow or reverse these undesirable developments. It is likely that much of this resistance originates from allegiance to comfortable, if outmoded, standards for assessing changes inside and outside the nation's compact urban settlements. Following is an examination of a few of these developments.

The Rise of the "Plastic" City in 20th-Century America

Our city building and other types of settlement formation are due less to planners' blueprints than the exigencies of basic economic

[10]Ray M. Northam, "Vacant Land in the American City," *Land Economics* 47 (1971): 345–355. See also Subcommittee on the City, Committee on Banking, Finance and Urban Affairs, *Compact Cities: Energy Saving Strategies for the Eighties* (Washington, D.C.: Government Printing Office, 1980).

[11]Wolf, p. 340.

[12]George Peterson and Worth Bateman, *Effects of Metropolitan Development Patterns: A Summary Report,* U.S. Department of Housing and Urban Development (Washington, D.C.: Government Printing Office, 1980). See also Dale Keyes, "The Influence of Energy on Future Patterns of Urban Development," in A. P. Solomon, ed., *The Prospective City: Economic Population, Energy and Environmental Developments Shaping Our Cities and Suburbs* (Cambridge: MIT Press, 1980), chap. 10. And also J. D. Kasarda, "The Implications of Contemporary Redistribution Trends for National Urban Policy," in D. A. Hicks and N. J. Glickman, eds., *Transition to the 21st Century: Prospects and Policies for Economic and Urban-Regional Transformation* (Greenwich, Conn.: JAI Press, forthcoming).

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transformation, population redistribution, demographic shifts, and technological innovations. Once the general outlines have been established by these larger-scale dynamics, then the filigree has been attended to.

Urban America became a demographic reality when the industrial era was already a half century old. The census of 1920 revealed that a majority of Americans lived in urban places for the first time in our history. Within 30 years, by 1950, we had taken the next step in becoming a metropolitan nation: by midcentury half of the nation resided in the analytical, if not administrative, units we know as metro areas. This is more a comment on the pace and scale of our nation's integration than on the actual structure of our urban settlements. The majority of the nation still lived in small cities and towns; a much smaller proportion resided in the mammoth central cities located for the most part in the industrial heartland.

Gradually, the change in the national economy meant that the extractive primary sector – especially between the Civil War and the Great Depression – was making way for the emerging secondary sector. The nation's industrialization had proceeded apace with urbanization. The pillars of the nation's economy now stood in the industrial cities, to which the surplus population thronged from rural areas and abroad.

Even though our towns and cities grew in the six decades or so between the nation's founding and the onset of the Industrial Revolution, they were still largely economic extensions of the countryside, the anchor of our economy. These early urban areas are perhaps better understood as collection points for those who had become redundant to the agrarian economy as well as for those who wanted to acquire and re-enter the primary economy.

The gradual onset of the industrial era had shaped the nation's cities. As the nation left an essentially agrarian era, these cities became the staging areas for the next evolution in the national economy. The location of the major industrial cities reflected the way in which land itself, the backbone of the agrarian economy until the Civil War, was being redefined. Technology and the demand for it can create value in the land, rather than simply extract it through agriculture, mining, forestry and fishing, as is evidenced by our reliance during the 20th century on such resources as oil, natural gas, and other ingredients locked in the land for which a market had to evolve and for which demand and ultimately value itself had to be socially orchestrated.

So, the spatial arrangement of our industrial cities, regardless of their location either geographically or in an industrial hierarchy, depended on the requirements of the emerging industrial era. Rather

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than places for surplus labor to retreat to, cities were sought out for the employment niches they offered in the emerging industrial economy. The industrial era was thus accompanied by great employment growth in the cities. On the farm productivity increases meant diminishing employment opportunities, while in the city factories opened them up. In turn, the form of these industrial cities was being dictated largely by the energy and linkage (i.e., transportation and communication) technologies of the 19th century. Steam power meant compact production arrangements; factories were generally clustered at the eventual core of these early cities. The linking technologies reinforced this compactness and further dictated the huddling of residential settlements within walking distance of these industrial core areas. Today, the physical properties and internal spatial arrangements of our aging industrial cities reflect the technological and economic regimes that spawned them.

Presently, we are so far removed from our agrarian moorings that we can hardly appreciate the basic malleability of the city. We have lost sight of the essential responsiveness of patterns of human settlement to the structure of the economy and the impact of technological advances. Few of us can appreciate that the city at base may be viewed as a complex of spatial arrangements for state-of-the-art industrial production which requires such varied factors as capital, labor, and land. The city, then, like the land upon which it is situated, is the physical expression of our economic and technological capacities to control time and space. And it may well be that the city means even more than this to some, but this added significance is derivative at best from its essential character.

The Multi-Scale Deconcentration of Urban-Industrial America

During the Interventionist Era (1930–1980), the spatial attributes of the nation's demography and economy were altered dramatically, as reflected in structural adjustments which dwarf the purposive (public policy) interventions of the era. Between 1960 and 1970 the nation's population increased 13.4 percent from 179.3 million to 203.3 million; between 1970 and 1980 the population rose to 229.5 million for an increase of 12.9 percent. Yet, it is the spatial distribution of this growth that has the greatest implications for the nation. If we consider how the nation's central cities fared over the past decade, we find that of the 56 cities with a population exceeding a quarter million, over half (30) lost total population. Moreover, while the proportion of whites declined in all 56 cities, the proportion of

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black residents increased in all but three of these cities. By 1980, 71 percent of all blacks and 57 percent of all Hispanics were residents of the nation's central cities.

Analyses of recent and long-term population trends show that the suburban shift will likely continue as the nation's dominant deconcentration pattern through the 20th and into the 21st century. By 1980 nearly 45 percent of all Americans (100 million-plus) resided in suburban areas. Yet, the suburbanization trend does appear to be slowing somewhat as exurban growth surges. While the suburbs grew during the 1950s by 48.6 percent, and during the 1960s by 26.8 percent, in the past decade the rate of growth dropped to 18.2 percent.[13] These suburban shifts are characterized by the growing spatial separation of economic disadvantage among both black and white households. Table 1 shows that during the past two decades, while the percentage of poor white families has been increasing slightly in the central cities and moderately in the suburbs, the percentage of poor black families has been increasing markedly within the central cities and slightly in the suburbs. During the past decade, of all black families in poverty, over half are in central cities.

At the next largest spatial scale, we encounter metropolitan America where nearly three-quarters (169.4 million) of the nation's pop-

TABLE 1

PERCENT DISTRIBUTION OF WHITE AND BLACK FAMILIES IN POVERTY, SELECTED YEARS

	White Families				Black Families			
	1959	1969	1974	1979	1959	1969	1975	1978
Central cities	23.0	28.6	27.4	28.2	38.4	43.4	54.2	57.9
Suburbs	18.7	24.4	28.4	28.5	11.9	13.1	12.1	13.2
Nonmetropolitan	58.3	47.2	44.4	43.3	49.6	43.5	33.7	28.9
TOTAL*	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*All columns will not equal 100.0 due to rounding.

SOURCE: U.S. Bureau of the Census, *Current Population Reports*, Series P-23, No. 80 (1978).

NOTE: Table 1 appeared as Table 8 in National Research Council, *Critical Issues for National Urban Policy: A Reconnaissance and Agenda for Further Study*, First Annual Report of the Committee on National Urban Policy (Washington, D.C.: National Academy Press, 1982), p. 36.

[13]"Suburbs' Growth Slowing, Analysis of Census Shows," *Dallas Morning News*, April 10, 1982.

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ulation lives. Metropolitan counties comprise just over 15 percent of the nation's 2.3 billion acres in land area, though only 63 million acres (about 3 percent of the U.S. total) are considered inhabited.[14] Approximately 90 percent of all growth was in metro areas between 1950 and 1970.[15] By 1974 this had dropped to 60 percent.

Since the mid-1970s, the growth rate of nonmetropolitan America has exceeded that of metropolitan America. Preliminary figures from the Department of Agriculture and the Census Bureau indicate that population growth in nonmetropolitan areas between 1970 and 1980 was 12.4 percent in the Northeast, 7.8 percent in the North Central region, 17.1 percent in the South and 31.8 percent in the West. Despite the recent eclipse of metro growth rates by nonmetro rates, 35 new metro areas have been designated in the past decade, bringing the total to 318. Ironically, the number of metro areas is increasing even as the forces that account for their past dominance continue to dissipate. The nation's population is gravitating to ever smaller places (less than 2,500), which are found to be growing the fastest, and somewhat larger places are now meeting the minimal criteria to become metro areas.

In past decades, absolute population loss has begun to be felt on the scale of entire metro areas. Since 1970, 29 metro areas, all but one located in the Northeast or North Central regions of the country, registered population declines. The fastest growing SMSAs are all located in the South or the West.

Accompanying these patterns of multi-scale population redistribution have been more significant patterns of economic restructuring. As Table 2 indicates, in the three decades up to 1990 the nation's employment structure will change significantly. Within the context of expanding national employment due to the baby boom of the 1940s–50s and women reentering the labor force, the decade of the 1970s actually witnessed reduced employment in agriculture, manufacturing and contract construction, transportation, communication, and public utilities, and private household services. These employment figures do not necessarily tell us anything about the productivity within those sectors, though we know that overall productivity gains during the 1970s were marginal at best (0.6 percent average increase for 1975–79 – the lowest of all advanced nations).[16]

[14]Wolf, p. 336.

[15]Fuguitt and Voss, p. 3.

[16]U.S. Congress, Office of Technology Assessment, *U.S. Industrial Competitiveness: A Comparison of Steel, Electronics and Automobiles* (Washington, D.C.: Government Printing Office, 1981), p. 5. See also President's Commission for a National Agenda for

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TABLE 2

TOTAL EMPLOYMENT BY MAJOR SECTORS, ACTUAL AND PROJECTED, SELECTED YEARS, 1959–1990 (LEVEL IN THOUSANDS)

Industry Sector	Level						
	1959	1968	1972	1977	1980	1985	1990
Total civilian employment[a]	67,563	79,836	88,408	93,715	101,761	111,851	118,615
Government[b]	8,083	11,846	13,738	15,189	15,868	16,865	17,907
Total Private	59,450	67,990	74,670	78,526	85,893	94,996	101,106
Agriculture	5,491	3,663	3,206	2,922	2,974	2,922	2,634
Nonagriculture	53,989	64,327	71,464	75,604	82,919	92,064	96,474
Mining	765	634	677	867	1,002	1,055	1,072
Contract construction	3,680	3,948	4,766	4,672	5,067	5,556	5,748
Manufacturing	17,001	20,038	20,352	19,844	21,492	23,014	23,882
Durable goods	9,577	11,792	12,029	11,671	12,929	14,098	14,692
Nondurable goods	7,424	8,246	8,232	8,173	8,563	8,915	9,189
Transportation, communication, and public utilities	4,241	4,521	4,867	4,838	5,212	5,516	5,658
Transportation	2,743	2,840	2,919	2,876	3,098	3,270	3,332
Communication	874	1,017	1,207	1,203	1,304	1,391	1,473
Public utilities	624	664	741	759	809	856	853
Wholesale and retail sale	13,758	16,329	19,026	20,906	23,351	25,907	27,370
Wholesale	3,527	4,118	4,688	4,991	5,511	5,834	5,856
Retail	10,231	12,211	14,338	15,917	17,840	20,073	21,482

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TABLE 2 (cont.)

TOTAL EMPLOYMENT BY MAJOR SECTORS, ACTUAL AND PROJECTED, SELECTED YEARS, 1959–1990 (LEVEL IN THOUSANDS)

Industry Sector	Level						
	1959	1968	1972	1977	1980	1985	1990
Finance, insurance, and real estate	2,882	3,672	4,433	4,888	5,312	6,113	6,695
Other services	9,088	12,748	15,254	17,674	19,861	23,457	26,742
Private households	2,574	2,437	2,089	1,913	1,602	1,447	1,307

Industry Sector	Average Annual Rate of Change					
	1959–68	1968–73	1973–77	1977–80	1980–85	1985–90
Total civilian employment[a]	1.9	2.1	1.5	2.8	1.9	1.2
Government[b]	4.3	3.0	2.5	1.5	1.2	.8
Total private	1.5	1.9	1.3	3.0	2.0	1.3
Agriculture	−4.4	−2.6	−2.3	.6	− .4	−2.1
Nonagriculture	2.0	2.1	1.4	3.1	2.1	1.4
Mining	−2.1	1.3	6.4	5.0	1.0	.3
Contract construction	.8	3.8	− .5	2.9	1.8	.7
Manufacturing	1.8	− .3	− .6	2.7	1.4	.7
Durable goods	2.3	.4	− .8	3.5	1.7	.8
Nondurable goods	1.2	.2	− .5	1.6	.8	.6

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Transportation, communication, and public utilities	.7	1.5	− .1	2.5	1.1	.5
Transportation	.4	.6	− .4	2.5	1.1	.4
Communication	1.7	3.5	− .1	2.7	1.3	1.2
Public utilities	.7	2.2	.6	2.2	1.1	− .1
Wholesale and retail sale	1.9	3.1	2.4	3.8	2.1	1.1
Wholesale	1.7	2.6	1.6	3.4	1.1	.2
Retail	2.0	3.3	2.6	3.9	2.4	1.4
Finance, insurance, and real estate	2.7	3.8	2.5	2.8	2.8	1.8
Other services	3.8	3.7	3.7	4.0	3.4	2.7
Private households	.6	−3.0	−2.2	−5.7	−2.0	−2.0

[a]Employment is on jobs concept and includes wage and salary workers, the self-employed, unpaid family workers, and private household workers.

[b]Government employment used in this table is based on BLS concepts. The figure includes government enterprise employment.

SOURCE: Valerie A. Personick, "Industry Output and Employment: BLS Projections to 1990," *Monthly Labor Review*, BLS Bulletin 2030, P-32 (April 1979).

NOTE: Table 2 appeared as Table 7 in National Research Council, *Critical Issues for National Urban Policy: A Reconnaissance and Agenda for Further Study*, First Annual Report of the Committee on National Urban Policy (Washington, D.C.: National Academy Press, 1982), pp. 27–28.

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Employment growth in the service sector has generally led the way since World War II while nonservice sector employment has declined relatively. Today two-thirds of the labor force is in the service sector, while the proportion in manufacturing is down to 22 percent.[17] Given the spatial implications of these restructurings, the consequences for the economies of our larger urban areas are particularly important. Between 1972 and 1977 the central city's share of metropolitan manufacturing declined in 44 of the 56 central cities larger than 250,000.[18] This is, of course, just an extension of a 20th century trend. A recent study by the Urban Institute indicates that since 1900 the central cities' share of metropolitan manufacturing has been declining.[19] Indeed, between 1970–75, for metropolitan areas larger than a million, nearly one in ten manufacturing jobs were lost.[20]

Over the same five-year span, the retailing sector of the central city has also diminished relative to the rest of the metropolitan area in 47 of the 56 areas. These figures help document a virtual revolution in retailing over the past 30 years. The evolution of suburban shopping malls, followed by regional shopping malls at some distance from the CBDs of older central cities, has been remarkable. In 1950, there were 100 shopping centers in the nation. By 1980 it is estimated that there were over 20,000, with nearly half of these added in the last decade.[21] Today, of all the receipts generated in the nation's two dozen largest metropolitan areas, the proportion generated by shop-

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the Eighties, *The American Economy: Employment, Productivity, and Inflation in the Eighties*, Report of the Panel on The American Economy (Washington, D.C.: Government Printing Office, 1981), pp. 19–20.

[17]National Research Council, *Critical Issues for National Urban Policy: A Reconnaissance and Agenda for Further Study* (Washington, D.C.: National Academy Press, 1981), p. 24.

[18]U.S. Bureau of Census, "1980 Census Population for Cities of 100,000 and Over by Rank Order," news release (Washington, D.C.: Government Printing Office, June 1981). Detailed figures available on request.

[19]Charlotte Fremon, "The Occupational Patterns in Urban Employment Change: 1965–1967," Urban Institute working paper, Washington, D.C., January 1970, p. 11. See also Bennett Harrison, *Urban Economic Development: Suburbanization, Minority Opportunity, and the Condition of the Central City* (Washington, D.C.: The Urban Institute, 1974). And A. P. Solomon, "The Emerging Metropolis," in A. P. Solomon, *The Prospective City*, chap. 1.

[20]Harvey A. Garn and Larry C. Ledabur, "The Economic Performance and Prospects of Cities," in A. P. Solomon, *The Prospective City*, p. 233. See also J. Thomas Black, "The Changing Economic Role of Central Cities and Suburbs," in A. P. Solomon, *The Prospective City*, chap. 4. And *The President's National Urban Policy Report, 1980* (Washington, D.C.: Government Printing Office, 1980), pp. 8–3 ff.

[21]"Shopping Center Census," *Shopping Center World*, January 1977, pp. 15–23.

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ing centers exceeds that generated by central business districts for the first time – so dramatic has been the deconcentration of retailing arrangements in recent years.

The growth of the service sector has been especially important for local urban economies, just as it has been for the larger national economy. Service sector growth has followed the spread of population to suburban areas and beyond; still, in 14 central cities the absolute proportion of metropolitan service sector growth in the central cities increased between 1972 and 1977. This subtrend is a part of the more dominant trend of service sector expansion throughout the national economy at all spatial scales beyond the central city.

While the real significance of the expansion of metropolitan economies can be seen at the multistate region level, a number of notable consequences occur at this next larger spatial scale. As Table 3 indicates, the nation's major regions have experienced uneven growth rates since 1960 which, along with a spatially shifting economy, has narrowed the historical gap among regions in terms of jobs, per capita income, and a variety of other indicators of economic functioning. The spatial pattern of responses from the political economy likewise reflects this convergence trend, as Table 4 indicates.

TABLE 3

POPULATION OF THE UNITED STATES BY REGION, 1960, 1970, AND 1978

(NUMBERS IN THOUSANDS)

Region	1960	1970	1978	Percent Change 1960–1970	Percent Change 1970–1978
United States	179,311	203,305	218,059	13.4	7.3
Northeast	44,678	49,061	49,081	9.8	0.0
North Central	51,619	56,593	58,251	9.6	2.9
South	54,961	62,812	70,626	14.3	12.4
West	28,053	34,839	40,100	24.2	15.1

SOURCES: U.S. Bureau of the Census, *Data Book for the White House Conference on Balanced National and Economic Development*, January 1978, Table 1-8; and U.S. Bureau of the Census, "Estimates of the Population of States, by Age: July 1, 1977 and 1978," *Current Population Reports*, Series P-25, No. 794, Table 1.

NOTE: This table appeared as Table 1-1 in *The President's National Urban Policy Report* (Washington, D.C.: Government Printing Office, 1980), pp. 1–2.

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TABLE 4

POLITICAL ECONOMY REFLECTS MARKET ECONOMY CONVERGENCE

Federal Funds Flow Shifts to the Frostbelt

The first four columns, for fiscal 1979, show: (1) federal spending per person; (2) the federal tax burden per person, with the federal deficit distributed as an added tax; (3) the amount of money received for each tax dollar; and (4) total funds that flowed in or out. In the fifth and sixth columns are comparisons from fiscal 1975.

	Fiscal 1979				Fiscal 1975	
	Spending per person	Taxes per person	Spending taxes ratio	Dollar flow (in millions)	Spending taxes ratio	Dollar flow (in millions)
Northeast	**$2,058**	**$2,200**	**$0.94**	**−$6,969**	**$0.86**	**−$10,776**
New England	**2,339**	**2,145**	**1.09**	**2,390**	**0.96**	**−762**
Maine	2,063	1,560	1.32	552	1.12	139
New Hampshire	1,879	2,034	0.92	−137	1.00	1
Vermont	1,862	1,595	1.17	132	1.17	91
Massachusetts	2,377	2,100	1.13	1,593	0.95	−462
Rhode Island	2,074	1,991	1.04	77	0.92	−107
Connecticut	2,654	2,598	1.02	174	0.92	−425
Mid-Atlantic	**1,964**	**2,219**	**0.88**	**−9,359**	**0.83**	**−10,013**
New York	2,103	2,201	0.96	−1,740	0.89	−3,392
New Jersey	1,722	2,485	0.71	−5,595	0.66	−4,436
Pennsylvania	1,905	2,078	0.92	−2,024	0.87	−2,185
Midwest	**1,738**	**2,202**	**0.79**	**−27,068**	**0.76**	**−20,074**
Great Lakes	**1,609**	**2,275**	**0.71**	**−27,483**	**0.70**	**−18,618**
Ohio	1,545	2,172	0.71	−6,736	0.70	−4,634
Indiana	1,469	2,098	0.70	−3,398	0.73	−2,036

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Illinois	1,851	2,537	0.73	−7,707	0.72	−5,290
Michigan	1,556	2,346	0.66	−7,272	0.65	−4,971
Wisconsin	1,448	1,950	0.74	−2,370	0.73	−1,686
Great Plains	**2,048**	**2,023**	**1.01**	**415**	**0.94**	**−1,456**
Minnesota	1,801	2,119	0.85	−1,289	0.83	−934
Iowa	1,602	2,104	0.76	−1,455	0.69	−1,249
Missouri	2,450	1,958	1.25	2,395	1.10	657
Kansas	1,997	2,089	0.96	−218	0.98	−78
Nebraska	2,103	1,998	1.05	165	0.84	−351
South Dakota	2,249	1,611	1.40	439	1.29	215
North Dakota	2,405	1,830	1.31	377	1.35	283
South	**2,090**	**1,864**	**1.12**	**16,003**	**1.14**	**11,522**
South Atlantic	**2,188**	**1,908**	**1.15**	**9,596**	**1.12**	**4,986**
Delaware	1,768	2,384	0.74	−359	0.66	347
Maryland	2,808	2,375	1.18	1,797	1.20	1,299
Virginia	2,901	2,056	1.41	4,395	1.34	−2,257
West Virginia	1,887	1,699	1.11	353	1.21	410
North Carolina	1,612	1,658	0.97	−262	0.98	−115
South Carolina	1,834	1,577	1.16	753	1.19	561
Georgia	1,901	1,708	1.11	985	1.16	912
Florida	2,217	1,999	1.11	1,934	1.00	9
South Central	**1,997**	**1,822**	**1.10**	**6,407**	**1.17**	**6,536**
Kentucky	1,872	1,678	1.12	683	1.21	790
Tennessee	2,378	1,711	1.39	2,925	1.13	627
Alabama	1,968	1,595	1.23	1,406	1.34	1,255
Mississippi	2,073	1,314	1.58	1,845	1.76	1,621
Louisiana	1,866	1,773	1.05	377	1.16	652
Arkansas	1,815	1,464	1.24	766	1.24	492

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TABLE 4 (cont.)

POLITICAL ECONOMY REFLECTS MARKET ECONOMY CONVERGENCE

	Fiscal 1979				Fiscal 1975	
	Spending per person	Taxes per person	Spending taxes ratio	Dollar flow (in millions)	Spending taxes ratio	Dollar flow (in millions)
Oklahoma	2,037	1,871	1.09	481	1.22	711
Texas	1,960	2,116	0.93	−2,075	1.03	388
West	**2,348**	**2,240**	**1.05**	**4,403**	**1.20**	**10,639**
Mountain	**2,315**	**1,928**	**1.20**	**4,129**	**1.30**	**3,631**
Montana	2,231	1,883	1.19	274	1.28	246
Idaho	2,031	1,686	1.20	312	1.25	223
Wyoming	2,119	2,364	0.90	−110	1.21	102
Colorado	2,240	2,119	1.06	337	1.20	704
Utah	2,084	1,624	1.28	629	1.35	455
Nevada	2,383	2,570	0.93	−131	0.96	−40
Arizona	2,261	1,869	1.21	960	1.31	853
New Mexico	3,138	1,640	1.91	1,859	1.93	1,090
Pacific	**2,359**	**2,350**	**1.00**	**274**	**1.17**	**7,008**
California	2,315	2,366	0.98	−1,165	1.11	3,684
Oregon	1,911	2,178	0.88	−676	0.94	−202
Washington	2,527	2,297	1.10	901	1.40	2,008
Alaska	4,759	3,304	1.44	591	2.44	776
Hawaii	2,906	2,224	1.30	624	1.58	741
Washington, D.C.	**23,529**	**2,750**	**8.56**	**13,631**	**7.67**	**8,690**
Total United States	**$2,101**	**$2,101**	**$1.00**	**$0**	**$1.00**	**$0**

SOURCE: *National Journal*, February 7, 1981, p. 234.

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To Ride or To Rule – Confusion in the Interventionist Era

As we have seen, the dominant dynamics of the Interventionist Era have been the dispersion of population, the deconcentration of economic activity, and the diffusion of technological innovation. While the immediate impact has been to decentralize population and economic activity, the secondary effects of growth and the clustering of people and jobs in adjacent and remote settings has also been noted. Significantly, the ubiquitous spatial impacts of explicit public policies in all policy domains have been seized upon as significant shapers of these patterns of deconcentration. As stated in the President's National Urban Policy Report for 1978, "The most powerful direct action that has contributed to metropolitan decentralization and central-city decline, the opening up of nonmetropolitan America, and the regional dispersion of population and economic activity has been the construction of the interstate highway system."[22] Additional factors are the anti-urban impacts of defense contracts and spending, subsidies for infrastructure construction (e.g., water and sewer construction) in peripheral areas, and the pattern of other federal grants and subsidies.

Yet, the irony is that spatial impacts of public policy can never be avoided. Further, it is reasonable to note that the explicit goals of the several national public policies cited above, which are judged to have had such determinative spatial impacts, had other than explicit spatial goals. The issue then becomes whether or not public policies should be crafted and implemented whose explicit and primary purpose is to have a spatial, as distinct from some other kind of structural, impact. Improved transportation, housing, and defense only inadvertently and secondarily required that public dollars subsidize growth and vitality in locations away from central cities and in regions outside the industrial heartland. Besides, recent closer examination shows that these eventual impacts of public policy are probably both grossly overestimated and misunderstood. For instance, Briggs has shown that interstate highway construction has had little systematic impact on the resurgence of growth in nonmetropolitan America.[23] Nonmetro growth is due much more to the investment of value and attention in amenity-rich areas which lie at the periphery of metropolitan areas

[22]U.S. Department of Housing and Urban Development, *President's National Urban Policy Report* (Washington, D.C.: Government Printing Office, 1978).

[23]Ronald Briggs, *The Impact of the Interstate Highway System on Non-metropolitan Growth* (Washington, D.C.: U.S. Department of Transportation, 1980).

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in *all* regions of the country. Likewise, Rees and others have demonstrated that while defense spending has proceeded through a concentration of federal funds in the South and the West,[24] this is only true of primary contracting. A spatial analysis of subcontracting patterns reveals that the bulk of these funds flow back quickly into the relatively well diversified economies of the Northeast and North Central regions.

New Arrangements for Post-Industrial Urban America

The premier dynamic evident in the nation's economy and demography throughout the 20th century has been a multiscale deconcentration. Aided and abetted by the largely inadvertent and unintended impacts of the political economy in a variety of policy domains, the driving force behind these dynamics has been a changing market economy. Also important have been the technological advancements that have liberated the economy from the land, and households and firms from specific locations.

It is important to acknowledge that while this multiscale deconcentration has been proceeding at higher rates throughout our nation-building process, suburbanization is just now a century old, and nonmetropolitan resurgence less than a decade old. So, it has only been in the last few years that deconcentration has proceeded simultaneously across several spatial scales. Of more significance to the policy community, however, is the fact that the multiple impacts of these trends have been most visible in the last half of the Interventionist Era.

The movement to the periphery proceeded, for the most part not because it had to, but because it could. Maturing industrial processes which depended on lower land and labor costs and tax burdens spread out within and beyond metropolitan-scale settings in the industrial heartland, and later beyond to other regions. The high industrial dispersion of the past decade was often the de facto result of capital mobility tied to the secondary expansion of existing firms to new locations and the birth of indigenous firms at the periphery, rather than to actual physical relocation. Further, while these dynamics will no doubt continue to operate in the years ahead, evidence

[24]John Rees, "Government Policy and Industrial Location in the United States," *State and Local Finance: Adjustments in a Changing Economy*, vol. 7, Special Study on Economic Change of the Joint Economic Committee (Washington, D.C.: Government Printing Office, 1980). See also, "World Market for Commercial Airplanes: The New Competitive Environment," The Boeing Company, February 1981.

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suggests that as convergence within and between metro areas and multistate regions continues, the factors underlying this convergence are slowly and predictably dissipating. Table 5 illustrates the trend toward narrowing wage differentials between New York City and Dallas-Ft. Worth and Houston – a fact often used to explain the South's "business climate" advantage over the Northeast and North Central regions.

Population has dispersed both in the path of and in the wake of industrial dispersion as a residential corollary to the product cycle.[25] Following World War II housing and an array of residential amenities were increasingly available to the expanding middle class at the peripheries of established settlements. The suburbanization process was nourished not only by short-distance movers leaving the cities for the suburbs, but also by the tendency of long-distance movers to avoid the cities. In most cases, households were able to satisfy the cluster of housing, service, and amenity demands and preferences while retaining access to their job sites.

By the late 1970s, as both firms and households continued to move to the suburbs and exurbs, accessibility was retained, despite higher nominal energy costs, through a series of adjustments. Beale and Bowles report that: "Household heads living in nonmetropolitan counties travel only a median of 4.6 miles to work each day, compared to 7.6 miles traveled by household heads in metro areas. It also takes these people less time to get to work – 14.5 minutes vs. 22.2 minutes for the average metropolitan resident."[26]

Taken together, then, we begin to recognize crucial chinks in the armamentarium of the Interventionist Era that has held that *deconcentration* is inherently wasteful of time, energy, and other assorted resources. The *dispersion* which is at the core of deconcentration is what has afflicted the compactness of our industrial era settlement arrangements; an allied process, *decentralization*, has unravelled our central cities. New and displaced development at the periphery, commonly called "spread" or "*sprawl*" development, has been derided throughout the Interventionist Era as profligate and unaesthetic. The lower density physical development characteristic of decentralization in particular has been denounced in the energy-sensitive decade of the 1970s.

Yet, most commentators and analysts have lumped together deconcentration, dispersion, decentralization, low-density development,

[25]Cf. R. D. Norton and J. Rees, "The Product Cycle and the Spatial Decentralization of American Manufacturing," *Regional Studies* vol. 13, no. 2 (1979): 141–151.

[26]"The Rural Commuter," *American Demographics*, February 1981, p. 12.

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TABLE 5

EVIDENCE OF INTERREGIONAL WAGE CONVERGENCE

Wages: New York vs. Texas

New York City and Houston averages as of May 1981; Dallas-Fort Worth averages as of December 1980. Figures are for the metropolitan areas as defined by the Bureau of Labor Statistics. Salaries in the first two categories are weekly; in the last two, hourly.

Occupation	New York City	Dallas-Ft. Worth	Houston
Clerical			
Secretaries	$289.00	$283.00	$314.50
Stenographers	250.50	281.50	291.50
Typists	195.50	186.00	221.50
File Clerks	175.00	166.50	182.50
Messengers	171.50	169.00	179.00
Accounting clerks	235.50	219.50	253.00
Electronic data processing			
Key entry operators	232.50	208.00	237.50
Systems analysts	535.50	453.50	490.50
Programmers	404.50	344.50	425.50
Computer operators	291.00	259.50	286.50
Skilled maintenance			
Carpenters	8.83	9.00	11.69
Electricians	10.23	10.13	11.65
Painters	8.57	9.01	11.00
Machinists	10.93	9.51	11.79
Motor vehicle mechanics	10.57	9.33	10.08
Stationary engineers	10.17	9.17	9.98
Unskilled plant			
Truck drivers	9.67	7.49	8.26
Warehouse laborers	6.95	6.78	7.28
Material handling laborers	8.14	5.66	7.14
Janitors, porters, cleaners	6.17	4.13	3.89

Source: Bureau of Labor Statistics

SOURCE: Table 5 appeared in *Society*, March/April 1982, p. 4.

and sprawl as the undifferentiated cause-and-effect of the difficulties facing our cities. Perhaps it is time to differentiate these processes and decide whether or not we might have allowed our "common" sense and Interventionist Era ideologies to do our thinking for us. Perhaps the larger trends are not only ones that we can live with

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after all, but indeed in them we may find partial solutions to the variety of problems resulting from the settlement arrangements of the industrial era.

Today households and firms are making a wide variety of adjustments as they are forced to accommodate technological advances and marked changes in the relative costs of production factors.As jobs and people continue to move to the suburbs and exurbs, the potential for shorter commutes has become a reality. Increasingly, multifamily structures and physical development at ever higher densities are the predictable responses to the inherent energy efficiency – especially for space heating and cooling – of higher density structures. The fuel efficiency of the nation's transportation fleet has steadily improved as a result of federal mandates to domestic producers and, more importantly, of the public's response to the rising relative price of gasoline. Firms, likewise, have had to squeeze from their productive processes ever more energy – again, a response less to policy than price.[27] In the face of a labor shortage at the end of the century or just beyond, ever higher energy costs will likely prod this process even more. That other production costs including high taxes and expensive land requirements have been avoided or minimized by frequent relocation and/or expansion to suburban or exurban locations or business climates in other regions illustrates an adaptation with a spatial aspect.

In the countryside, too, conventional wisdom is being upended. Rural settings are becoming more attractive, not only to a wide variety of households, but to manufacturing, retail, and service industries. The agriculture sector, now the mainstay of our national exports, continues to prosper without making increased productivity dependent on access to increasing amounts of so-called "prime" land, or even land in general. Shifting land uses have typically caused alarm among those who cannot conceive of other than traditional land-use arrangements. Those who currently despair of the usurpation of rural land for urban uses may seriously misunderstand and underestimate the revolution that has occurred in the countryside during the industrial era. As Simon, Hart, Brown, Luttrell, Vining, et al., recently demonstrated, urban encroachment represents no serious threat to the nation's supply of rural land.[28] Further, the capability of technol-

[27]*The American Economy: Employment, Productivity, and Inflation in the Eighties*, p. 21.

[28]Julian L. Simon, "Are We Losing Ground?" *Illinois Business Review* 37 (April 1980): 1–6. See also Daniel R. Vining, Sr., Thomas Plaut, and Kenneth Biesi, "Urban Encroachment on Prime Agricultural Land in the United States," *International Regional*

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ogy to substitute for land renders land, especially "prime farm land," an anachronism. Increasingly, land is created – man-made. Moreover, not only is the world's stock of agricultural land increasing for the same reasons that our nation's agricultural capabilities have expanded, but the recurrent Malthusian concerns of population outstripping "fixed" environmental resources likewise remains unfounded.

The spatial implications of these adjustments for our settlement patterns have been remarkable. Likewise, the flexibility with which we use land has grown dramatically. As Wolf notes, a variety of myths about land are being exposed as secular ideologies and industrial era relics.[29] Not only does land retain little, if any, inherent value in the post-industrial era, but even more importantly, changes in demography and technology will continue to lessen our demand for land in the future. Any concern about a shortage of land, then, fails to appreciate the adaptive capacities among population, technology, the environment (including land and other natural resources), and the organizational flexibilities of human systems.

Thus, the rapprochement between dispersed development and higher densities is relatively unplanned. A new, more dispersed settlement form – perhaps even more far-flung than that of our metropolitan areas – is emerging with multiple nodes or clusters of activities. As the functions we require of our settlements change, so apparently may their forms. In the absence of evidence testifying to the superiority of any one urban form, we appear to be quietly reconstructing an array of viable alternatives to those which limited us during the industrial era.

The Post-Industrial Promise and the New Federalism Response

For three-quarters of a century – from the Civil War to the Great Depression – the industrial era endowed both form and function to our cities. Cities loomed in importance as both households and businesses moved into them. Local political and social institutions evolved to mediate the impact of the often harsh industrial realities for those who lived there. The late 19th and early 20th centuries spawned the

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Science Review vol. 2, no. 2 (1977): 143–156. And John Fraser Hart, "Urban Encroachment on Rural Areas," *The Geographical Review* 66 (January 1976): 1–17. And Clifton B. Luttrell, *Our "Shrinking" Farmland: Mirage or Potential Crisis*, Federal Reserve Bank of St. Louis, October 1980, pp. 11–18.

[29]Wolf, pp. 17–27.

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early versions of public sector responsibilities and the bureaucracies to carry them out. Gradually, functions like fire and police protection, sanitation, and education were spun away from households and the voluntary sector and were lodged in the public sector. Individual responsibility retreated as all manner of risks and responsibilities associated with collective life in a common location became socialized. Still, this shift proceeded largely within localities; the essential local orientation was preserved intact. We will now consider the extent to which emerging post-industrial arrangements and the scale of organized social and economic life have rendered the localism of the industrial era both inappropriate and obsolete.

These basic local arrangements characterized city life in America through the 1920s. The onslaught of the Great Depression–or more correctly our collective response to it – shattered these arrangements, however. The New Deal and the blizzard of federal government activities that emanated from that era may not have lifted us out of the Depression as expeditiously as did World War II, but they all reflected a changed appreciation for the extra-local scale of economic life, the calamity that beset it, and the type of public sector response deemed necessary. The localism that had reigned in our cities gave way to a national perspective. FDR correctly assessed that over time and without much visibility the structure of the economy had been transformed in such a way that its main engines had moved off the farm and into the cities. And maintenance of those engines would necessarily take place in the cities. Consequently, without really intending it, the city for the first time became the explicit target of federal intervention. The Interventionist Era was underway.

Roosevelt intended that the aid be temporary in response to episodic economic problems. However, the political power which accompanied population shifts to the cities had established a federal conduit to these cities that was not to be easily dismantled. We had become an urban nation with social and political arrangements to complement our transformed economy. If anything, the early federal attention to economic problems that only incidentally focused on cities developed over the years into a variety of place-specific social and economic interventions aimed at benefiting the nation generally by attending to the problems of cities specifically. Gradually, place-specific interventions spawned an assortment of people-specific interventions whose further purpose was to bolster the fortunes of city dwellers.

In the half century since the city became the explicit focus of an elaborate lineage of federal government interventions, the economy

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and enabling technologies have not stood still. Both have continued to change dramatically, accompanied by a withering assortment of spatial implications. While for a long time federal intervention in the cities had made sense from an economic standpoint, over time the economic justification faded, exposing an essentially political one. The economic superiority of industrial-era arrangements declined in direct proportion to the continued development of new transportation, communication, and production technologies. The industrial city, which had produced remarkable wealth, welfare, and health for the nation, had been accepted as a pinnacle of the urban economic evolution. Few realized that the very processes that had woven the city would begin to unravel it. That the city was a way station rather than a destination along an economic-technological pathway received little support.

The Interventionist Era of the past half century originated in and focused on the city. Even before the nation's economy centered in them, cities had been the locus of problems; this is especially so more recently because we are forcing them to outlive their usefulness. We have mistakenly associated the city's health with form, especially growth, rather than function.

The benchmark general election of 1980 was one of major reorientation. Apart from the reascendency of the Republican party to lead us into the '80s as it had into the '70s, a new conception of federalism was advanced. Nixon and Ford had used general revenue sharing and related devices to shift power back to subnational governments, but the flow of history was against them. Carter's new federalism was undone by "iron triangles" and lack of control over the budget process. By 1980 things were different. Contemporary efforts to reconstruct a new intergovernmental and intersectoral division of labor would shift major responsibilities back to subnational – and especially local – levels of government, and from the public to the private sector. Three major social welfare programs that may be affected are Medicaid, Aid to Families with Dependent Children (AFDC), and food stamps. The current proposal would have the federal government assume the entire bundle of financing and administrative arrangements associated with Medicaid and food stamps. In return, the states would assume the full range of responsibilities for AFDC. This restructuring of social welfare policy is instructive insofar as it extends to urban policy, natural resources, and other domains.

On the one hand, this restructuring of responsibilities is remarkable and should be well received since for the first time since the mid-1960s the welfare expenditures seem to be disciplined by the

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restructuring of the demographic base of the nation.[30] Unfortunately, this shift also reveals a bucolic desire to return to the more local orientation of past years. And the clock cannot be turned back so simply. The city as an institution and the character of its population have been dramatically altered in the past half century. The outmigration of the middle class, the growing calcification of minorities and the poor, and the restructuring of local and regional economies have rendered the localism that was appropriate to past policy out of synch with urban areas and urban problems of today and tomorrow. The form and function of our urban settlements have changed dramatically in recent years. Population redistribution patterns and the restructuring of local, regional, and even national and international economies have scattered urban America. Rather than a return to local orientations of the past, a refinement of recent national perspectives may be needed most.

New Standards and Expectations to Fit New Circumstances

Today's deconcentration at several levels may be as inevitable a process as we have ever seen take hold of our economy and demography. Perhaps someday soon the advocates of public policy "solutions" to a wide range of "urban" problems will acknowledge these developments and begin to distinguish more carefully between those which violate our comfortable sense of order, predictability, and control, and those which may actually be life threatening. In the urban policy arena, at least, the vast majority of so-called urban problems may not really be problems at all – an unwanted conclusion reached by Edward Banfield a dozen years ago.[31]

It would perhaps be more appropriate to recognize the larger message in this paper that there always has been and will continue to be an inevitable mesh among demography, the economy, and technology that will likely precede the creation of supportive institutions, expectations, and interpretations and help us to accept them. We do not need to be submissive to these trends, but we must recognize the wisdom of adopting new standards for evaluating what is happening around us and responding appropriately. We have only to recall the suspicion and outright hostility with which urban America was received by agrarian America. Our politics, religion, literature,

[30]Claude E. Barfield, *Rethinking Federalism: Block Grants and Federal, State, and Local Responsibilities* (Washington, D.C.: American Enterprise Institute, 1982).

[31]Edward C. Banfield, *The Unheavenly City: The Nature and the Future of Our Urban Crisis* (Boston: Little, Brown, and Co., 1968).

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and other major opinion shapers have yielded only grudgingly to the urban influence. The Interventionist Era, despite its inevitability and occasional benefits, has blinded us to the humility with which we might better conduct our affairs.

Today we must contemplate and perhaps even welcome the possibility of the post-interventionist city in the broadest sense. (See John Sommer's paper in this issue.) The social and spatial aspects of past urban-industrial arrangements appear to be undergoing profound adjustments in order to assure our welfare in the post-industrial era ahead. We should carefully consider how our most well-intentioned urban and welfare policy interventions could hinder this change and our adaptation to it. In so doing, we need not abdicate our responsibility and concern for those who have not fared well within past economic and settlement arrangements and who have been the target of past interventions. But it remains to be seen whether we should revitalize the cities of the fading urban-industrial era if this only means shaping new circumstances to fit familiar policy responses. In our search for the causes of disadvantage and dependence we should look beyond present urban and social welfare policies which have been more appropriate to the urban-industrial arrangements we are leaving behind than to those which appear to lie ahead. Changing patterns of land use and settlement are dissolving traditional conceptions of wealth and our ability to produce and distribute it, and are replacing them with new ones. And linking people with these new opportunities will proceed in ways that differ from those we have known in the past.

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A COMMENT ON HICKS

Robert W. Poole, Jr.

Professor Hicks' paper provides a fresh and welcome perspective on the issues of land use and urban form. That his views are at variance with the conventional wisdom only serves to underscore the poverty of much that passes for accepted knowledge in these fields. My only reservations about the paper stem from its tendency not to follow through on a number of provocative observations.

One of these is the mention on page 446 of the problem of large amounts of vacant land in central cities. Hicks notes in passing that most land-use regulation is poorly suited to redevelopment. This would have been an ideal place to cite the tremendous accomplishments in privately conceived and implemented redevelopment that have taken place in Houston over the past two decades. The absence of conventional government land-use controls has permitted private developers great scope for assembling large parcels of land without political interference – and using voluntary acquisition methods, rather than the coercive power of eminent domain, to develop very large-scale projects such as Greenway Plaza. By these means Houston's downtown has been substantially revitalized, but without the large-scale use of tax monies. This singular exception to the general pattern of government redevelopment efforts – and its facilitation by the absence of conventional land-use controls – greatly strengthens Hicks' point.

Furthermore, the power of private forces to effect redevelopment – when unconstrained by land-use controls – is of direct relevance to a current Reagan administration proposal. With great fanfare, the administration has announced its Enterprise Zone proposal as a means of stimulating the private sector to redevelop inner cities. The original concept of enterprise zones, as developed by Peter Hall and Sir

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Geoffrey Howe in England, and popularized in this country by Stuart Butler, called for repeal of zoning laws, building codes, and other local land-use and business regulations. The administration proposal, however, never once mentions zoning or land-use controls, focusing almost exclusively on tax relief. Yet tax relief programs have been in place in various forms for many years without major impact on our cities. The Houston experience deserves far more attention in the public policy debate over enterprise zones.

A second valuable insight in Hicks' paper is his suggestion of the viability–perhaps even the superiority for many people–of what is commonly referred to as suburban sprawl. He cites the possibility of shorter commutes for suburbanites who both live and work in the suburbs. But there are several other transportation implications of the shift to the suburbs which Hicks describes so well.

To begin with, although more and more transportation economists recognize it, city policymakers continue to ignore the profound implications of decentralization for transit system economics. Urban bus lines began going bankrupt in the 1950s for a very good reason. The more dispersed the metropolitan area's population became, the more costly it became to provide a grid-type bus service–especially when fares were regulated by a consumer-conscious local government. By taking over the failing bus lines and consolidating them into a monopoly transit entity, cities attempted in vain to preserve an obsolete form of transit. The marketplace was providing information – in the form of red ink and bankruptcies – that the fundamental economics of transit had changed. But the political process willfully ignored that information. Instead, it demanded and received state subsidies, federal capital grants, and then federal operating subsidies. Today, with ridership still declining and farebox revenues covering only one-third of expenses, the absurdities of our cities' transit policies are becoming more evident. What is needed – and what the marketplace would provide, were transit deregulated – is a decentralized transit system made up of express bus lines on high-density commuter corridors, vans and jitneys for low-density areawide service, and taxicabs for premium service.

Another implication of suburbanization is pointed out by Jeff Riggenbach in a forthcoming article in *Reason* magazine. Drawing on John Rae's *The Road and the Car in American Life* (MIT Press, 1971), Riggenbach points out that it is not Snowbelt cities, per se, that are in decline vis-à-vis Sunbelt cities. Rather, he maintains, those cities that are healthy and growing are those that have adapted best to the reality of the automobile and truck, as opposed to those constrained by anti-auto transit systems and land-use policies. This, he

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maintains, is a principal reason why Los Angeles, Houston, and Phoenix are booming while Philadelphia, Chicago, and even Atlanta are in decline.

Third, Hicks makes a provocative comment about the 19th century transition from private to public provision of such services as police, fire, and sanitation. One would hope for some insight into *why* these shifts took place, to place in perspective the reversal of this trend that he alludes to on page 466, namely the growing move toward privatization of municipal services (see Robert Poole, *Cutting Back City Hall*, Universe Books, 1980).

Finally, it is very encouraging to note that Hicks' views are finding their way into national policy recommendations, of which the following is an example:

> Federal urban policy efforts should not necessarily be used to discourage the deconcentration of industry and households from central urban locations. Each emerging deconcentration trend is nothing more than an aggregate of countless choices by and actions of individuals, families, and firms influenced by social, cultural, and economic considerations; our public policy tools are least useful when they attempt to alter in a predictable way what the individual household or firm will do.

That statement appeared in the report of the President's Commission on a National Agenda for the Eighties. Although repudiated by then-president Carter, it has been informally endorsed by President Reagan. Thus, a greater acceptance of the realities of decentralization seems to be on the horizon at the federal level.

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THE NEW FEDERALISM: AN ECONOMIST'S VIEW

Wallace E. Oates

> *Measures adopted to produce greater equality are, however, exceedingly unsuitable for local authorities. The smaller the locality the more capricious and ineffectual are likely to be any efforts it may make to carry out such a policy. It seems clearly desirable that all such measures should be applied to the largest possible area, and that subordinate authorities should be left to act, like the individual, from motives of self-interest.*
>
> Edwin Cannan (1896)

> *Financial assistance to the poor is a legitimate responsibility of States and localities.*
>
> President Reagan (1982)

In his State of the Union address, President Reagan identified the basic premise of the New Federalism: "During the past 20 years, what had been a classic division of functions between the Federal Government and the States and localities has become a confused mess. Traditional understandings about the roles of each level of government have been violated." The source of the problem has been the intrusion of the federal government into many state and local matters with a consequent blurring of the responsibilities for providing various public services. Such sharing of functions "results in neither the Federal or other levels of government being respon-

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sible." In response, the President proposed "to clean up this mess" and to initiate "a major effort to restore American Federalism."

A determination of the proper structure of the federal system requires a coherent view of the appropriate roles of different levels of government. I shall turn first in this paper to the general issue of the assignment of functions in a federal system and subsequently to a description of the administration's proposals and an analysis of their likely effects on the functioning of state and local (and particularly urban) governments. I should emphasize at the outset that the analysis involves both positive and normative elements: At certain points, I seek *solely* to describe or predict the consequences of various components of the New Federalism proposals, while at other junctures I attempt to pass judgment on these prospects based on a prescriptive model of fiscal federalism.

The Division of Functions Among Levels of Government

Like the President, I have never been very comfortable with the popular "marble-cake" perspective on federal forms of government, which sees the functions of the public sector cutting across the layers of government in largely unpredictable and unsystematic ways. This view is neither very helpful in setting forth prescriptions for the vertical structuring of the government sector nor, I believe, fully satisfactory in describing its operation. Admittedly, the division of functions among levels of government is not subject to a precise and unchanging definition. But we can, from an economic perspective at least, propose some general guidelines that possess both normative and positive significance.

The standard textbook in public finance posits three economic functions for the public sector as a whole:

(1) The macroeconomic stabilization function, consisting of the use of various policies to stabilize the economy at high levels of employment with reasonable price stability;

(2) The distribution function of amending the market-determined distribution of income and wealth to one which better satisfies our objectives of social equity (particularly of providing adequate assistance to the poor);

(3) The allocation function, which entails the provision of certain goods and services (like national defense and a system of courts) that for various reasons would not be forthcoming at appropriate levels from the private sector of the economy.

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The peculiarly federal problem in this framework is the proper assignment of these functions to different levels of government.[1] Although there exists considerable controversy over the proper conduct of macroeconomic stabilization policy, there is general recognition that the responsibility for this first function must rest with the central government. Monetary control must be exercised at the central level; likewise, there is little potential for decentralized levels of government to use their fiscal instruments of spending and taxation to smooth explicitly cyclical fluctuations in levels of output and employment. Cyclical swings in economic activity are generally national in scope, and only the federal government has the policy tools to deal with them.

Likewise, there are serious constraints on decentralized levels of government in the pursuit of income redistribution. The high degree of mobility within national borders implies that one jurisdiction cannot tax a certain group significantly more heavily than elsewhere without creating incentives to move. A city, for example, that undertakes an aggressive program of taxation to provide generous support for the poor exposes itself to an influx of low-income households to take advantage of this support and an exodus of the well-to-do to escape relatively high tax bills. In short, mobility within a federal system imposes real constraints on the scope for decentralized redistributive policies. A community may wish collectively to establish what it sees as adequate support for its low-income residents, but be unable to do so because of the prospective movement of economic units that such a program would encourage. In this way, mobility may effectively prevent a community from doing what its members want to do.

At the same time, I don't wish to overstate the case. There is obviously some potential for modest redistributive programs. Moreover, as the size of the jurisdiction increases, the scope for assistance to the poor tends to expand; states obviously have greater possibilities for such policies than do individual municipalities. Edwin Cannan's position (noted at the outset of the paper and based on British experience with the locally administrated Poor Laws) may, perhaps, be too strong. Yet the point remains that the scope for decentralized programs for support of the poor is circumscribed. Even where the costs of mobility are, in fact, sufficiently high to allow significant income transfers, the *perceptions* of state and local policymakers as to possible detrimental results can be sufficient to rule out their

[1]For a more detailed treatment of the assignment issue, see Wallace Oates, *Fiscal Federalism* (New York: Harcourt Brace Jovanovich, 1972), chap. 1.

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adoption. Simply the threat of business and higher-income residents relocating (or not entering the jurisdiction in the first place) in response to relatively high levels of taxation exercises a sobering restraint on tax policy. State and local governments are acutely aware of the problem of tax competition.

In addition to this constraint on decentralized income redistribution, there is a second kind of economic argument for a basic central role in the funding of income-maintenance programs. This argument is based on the presumed concern of individuals with the alleviation of poverty in all parts of the nation. In the economist's jargon, assistance to the poor possesses some of the properties of a "public good" in that such assistance in one state confers not only benefits directly to the recipients themselves, but also contributes to the well-being of the non-poor across all states.[2] From this perspective, support from the central government becomes the instrument through which the national concern with poverty expresses itself in the income-maintenance programs in the individual states.

Finally, on purely equity grounds, one can contend that a "fair" resolution of the poverty problem requires central-government participation. Poverty is, in a fundamental sense, a national problem; its level and geographical pattern are inextricably interwoven with a diverse set of national economic and social policies. Moreover, the poor are unevenly distributed across the nation; in 1975, for example, the incidence of poverty in several southern states was more than twice that in states like Massachusetts and Minnesota. And it is precisely those states with the highest incidence of poverty that have the least fiscal capacity or ability to provide for the needs of the poor. To place the responsibility for support of the poor with the states and localities implies widely divergent levels of assistance for low-income households across jurisdictions or substantially different tax burdens on the non-poor. In this way, it seems unfair to allow certain higher-income individuals to avoid their share of the burden of financing income-maintenance programs by locating in states or localities with a relatively low incidence of poverty. A fair system, in this view, requires central funding of assistance to the poor that spreads the burden evenly over the non-poor residents of the nation.

[2]For a rigorous formulation of this argument, see H. Hochman and J. Rodgers, "Pareto Optimal Redistribution," *American Economic Review* 59 (September 1969):542–57. In this formulation, the income levels of the poor enter directly into the utility functions of the non-poor; contributions to the poor by one individual (or one state) thus produce external benefits in that they increase the utility of the other non-poor. This creates the usual sorts of free-rider problems associated with the provision of a public good.

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The raison d'être for decentralized government is found in the allocation function. For various services of primarily local interest, there is a compelling case for local provision in accordance with the tastes or preferences of local residents. As de Tocqueville observed over a century ago, "In great centralized nations the legislator is obliged to give a character of uniformity to the laws, which does not always suit the diversity of customs and of districts."[3] Decentralized provision of such services tailored to local preferences can significantly enhance well-being as compared with a "unitary" solution requiring uniform levels of services across all jurisdictions.[4] State and local governments are in a better position to respond to the specific needs of their constituencies for a wide range of services, including localized transport systems, refuse collection, police and fire protection, etc. At the same time, there are, of course, certain "public goods" that are national in character (national defense and foreign policy being the classic cases); for this class of goods and services, the central government must determine levels of provision.

The perspective that emerges from this economic approach to the structure of the federal system is one in which the central government assumes the primary responsibility for the stabilization and distribution functions and in which the allocation function is shared in such a way that different levels of government provide those services whose range of benefits and costs are confined to the residents of their respective jurisdictions. In this way, a federal system can succeed, in de Tocqueville's words, in "combining the different advantages which result from the magnitude and the littleness of nations."[5]

The New Federalism: The Reagan Proposals

With this economic perspective on fiscal federalism as background, I turn next to the specifics of the administration's program for the restructuring of the U.S. federal system. The Reagan effort to redefine and clarify the respective roles of the different levels of government is embodied in four proposals:

1. A "swap" of the federal role in the support of the Aid to Families with Dependent Children (AFDC) and Food Stamp Programs in

[3]Alexis de Tocqueville, *Democracy in America* (New York: Vintage Books, 1945), vol. I, p. 169.

[4]For an exercise in the measurement of these welfare gains, see D. Bradford and Oates, "Suburban Exploitation of Central Cities and Governmental Structure," in H. Hochman and G. Peterson, eds., *Redistribution Through Public Choice* (New York: Columbia University Press, 1974), pp. 43–92.

[5]De Tocqueville, p. 168.

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exchange for full federal assumption of the costs and administrative responsibility for Medicaid (which provides health care for low-income households). All of these programs are currently shared by the federal government and the states on a matching basis, with the federal share ranging from 50 to 77 percent.

2. A "turnback" to the states and localities of a variety of existing federal programs in the areas of education and training, social services, transportation, and community development.

3. The consolidation into more broadly defined "block" grants of a large number of specific categorical grant programs. Proposed block grants include child welfare, training and employment, rental rehabilitation, welfare administration, vocational and adult education, education for the handicapped, and rehabilitative services.

4. The creation of a "Federalism trust fund" from which the federal government would earmark the revenues from certain excise taxes and the windfall profits tax on oil for use by the states. This fund will eventually be phased out and will disappear after 1991 leaving the states the option of imposing their own excises to replace these funds or, alternatively, of cutting their spending.

This set of proposals reflects the administration's contention that the federal government has intervened in matters in which it has no legitimate business. In particular, the evolution of an elaborate system of categorical grants (with existing federal grant programs in excess of 500 distinct entities) has produced an intergovernmental fiscal system of "bewildering complexity." It is the view of the President, as expressed in his State of the Union message, that "this massive Federal grant-making system has distorted State and local decisions and usurped State and local functions." The thrust of the New Federalism is thus a move toward devolution, a move to disengage the federal government from its involvement in a broad range of domestic programs. As Governor Babbitt of Arizona has stated, "Congress ought to be worrying about arms control and defense instead of potholes in the streets. We might just have both an increased chance of survival and better streets."

The Administration's View of Fiscal Federalism

On first examination of the administration's proposals against the backdrop of our economic guidelines for the assignment of functions, there is one striking discrepancy: the proposed shift to the state and local sector of full responsibility for AFDC and Food Stamps. In fact, it is hard to find any rationale for the proposed swap of AFDC and

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Food Stamps for full funding of Medicaid. Assistance to the poor is one area where federal support seems essential. This has been recognized by economists and political scientists of both parties. Richard Nathan, former assistant director of OMB and a Republican who generally supports the movement toward decentralization and the use of block grants, argues:

> The best long-run answer is to have the policies for transfer payments made at the national level, with the Federal government providing equalized grant-in-aid payments to state governments which administer some of these payments. . . . [Unrestricted grants to states for welfare] would isolate the most controversial and vulnerable group of welfare recipients. It could result in competition by the states whereby some states would hold down benefits and tighten eligibility standards in ways that could eventually result in higher concentrations of the poor in the states with the most adequate welfare benefits. . . . The fact that people and jobs move in a free society is the underlying reason why the burden of financing welfare benefits should be shared on an equitable basis by the society as a whole.[6]

In short, this is one facet of the New Federalism that involves a fundamental misunderstanding of the appropriate roles of different levels of governments – a misunderstanding that may well undermine efforts to provide adequately for the poor. The likely response at the state and local level will be a scaling down of such assistance; Senator Moynihan, putting it more strongly, sees it as effectively "abolishing" AFDC. While the administration's dissatisfaction with the deficiencies of existing welfare programs is easy to understand, it is crucial to recognize at the same time that the appropriate response is reform of these programs at the *federal* level, not the abdication of federal responsibility for assistance to the nation's poor.[7] A far more sensible "swap" is the one suggested by the National Governor's Association and the National Council of State Legislatures: full state responsibility for roads, police, and schools in exchange for federal assumption of welfare.

[6]Claude E. Barfield, *Rethinking Federalism* (Washington, D.C.: American Enterprise Institute, 1981), p. 71.

[7]A case for decentralization of public assistance to the poor has been made on the political grounds that federal programs are subject to "irresistible pressures" for redistribution. State and local government responsibility for this function, so the argument goes, is essential to hold these programs in check. The thrust of this argument, however, appears to be undercut by recent experience: Real levels of federally supported welfare programs have declined substantially over the past decade. Measured in constant dollars, the average monthly AFDC benefit, for example, declined by 56 percent between 1969 and 1980. Ibid., pp.72–3.

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The administration's case for clarification and decentralization of "allocative functions" rests on firmer ground. The uncoordinated evolution of categorical grant programs has resulted in an enormously complex and overlapping system of intergovernmental grants that is badly in need of reform. The legitimacy of each of these programs on economic grounds must rest on the existence of a compelling national interest that transcends the concerns of state and local decision-makers. Undoubtedly, many existing categorical grant programs could not pass this test. It is, however, beyond the scope of this paper to examine these programs case-by-case to determine which among them can satisfy this criterion. Instead, I shall turn more broadly to the administration's proposals for grant consolidation and turnback as the basic mechanisms for the transition to the New Federalism. I begin with some background on the design of intergovernmental grants-in-aid.

The Economics of Intergovernmental Grants[8]

From an economic perspective, a system of intergovernmental grants has three objectives:

1. The encouragement of those state and local activities (e.g., basic research) whose benefits extend beyond jurisdictional borders;
2. The "equalization of fiscal capacity" to permit each jurisdiction to provide satisfactory levels of key public services with a level of fiscal effort that is not discernibly greater than that in other jurisdictions;
3. The establishment of a more efficient and equitable tax system for the public sector as a whole through some degree of revenue sharing (which effectively substitutes federal tax revenues for those from more distorting and regressive state-local forms of taxation).

It is important to recognize that these goals require quite different types of grants. To encourage certain programs with benefits on a national scale, the federal granting authority must adopt specific categorical grants that are carefully targeted on the individual activity. This calls typically for some form of matching grant that reduces the cost of the program to the recipient and thereby creates an incentive for its expansion. In contrast, equalizing grants and revenue sharing are not intended, in principle, to stimulate expenditures on specific programs (or in general). These objectives require unconditional or "lump-sum" grants that come to the recipient with no

[8]For a systematic analysis of the economic role of intergovernmental grants, see Oates, *Fiscal Federalism*, chap. 3.

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strings attached. In summary, we should expect a properly designed system of intergovernmental grants to include matching-grant programs that would encourage increased outputs where substantial "spillover benefits" exist and unconditional grants with larger allocations directed to those states or localities with relatively small tax bases.

As noted earlier, the New Federalism places heavy reliance on another form of grant: block grants.[9] The administration proposes to consolidate many narrowly defined categorical grant programs into block grants under which the federal aid is authorized for a broad range of activities within which the recipient chooses how to use the funds. The chief characteristic of block grants is the budgetary discretion they allow the recipient; state and local agencies would identify problems, design programs, and allocate monies within the broadly defined functional areas of the block grants.

Political scientist Michael Reagan contends that block grants represent a "reasonable compromise between the values of categorical grants and shared revenues" and that "such grants may be a useful way of centralizing policy while decentralizing administration and permitting considerable local choice and decision making on particular programs."[10] This description is, however, a bit misleading. An economic perspective suggests that in terms of their effects, block grants are typically equivalent to revenue sharing. Because of the "fungibility" of funds, block grants are effectively lump-sum monies; in general, there are no real (or binding) constraints on their use. Suppose, for example, that someone gives me $100 per month to spend on food. It is a simple matter, if I want to use these funds for other purposes, to substitute the grant for $100 of my own income that I would otherwise have spent on food consumption. I can then use the $100 for whatever I please so that it is as if the funds came with no strings attached. Likewise, block grants to state and local governments can easily replace state-local revenues that would have been used for these programs; the grant funds are thus effectively available for other programs or for state-local tax relief.

The one qualification to this equivalence condition is that block grants can constrain state and local budgetary decisions in the case where the grant exceeds the total that the recipients would have chosen to spend in the broad functional area of the grant. While this may occasionally occur, it must surely be the exception rather than the rule, particularly if the recipient exercises any budgetary inge-

[9]Barfield presents a useful discussion of the recent experience with block grants.
[10]*The New Federalism* (New York: Oxford University Press, 1975), p. 63.

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nuity. The basic point, then, is that block grants should be viewed as essentially equivalent to revenue sharing. This is not to say that they are undesirable, but only that they should be seen for what they are.

The Effects of the New Federalism on the State-Local Sector

The proposed grant consolidation and turnbacks of programs to the states and localities might be thought to stimulate budgetary activity at these levels as state-local agencies step in to fill the formerly federal role in providing various services. Closer study, I think, suggests otherwise. In particular, the evidence indicates that existing federal grant programs have induced a significant budgetary response at state and local levels; the restructuring of the grant system will, I shall argue, eliminate much of this stimulus with a substantial contractionary impact on state and local budgets.

First, the consolidation of categorical grant programs into block grants (even if the dollar level of grant monies were unchanged, which they are not) would lessen the stimulative impact of the federal grant system on state-local expenditure. Economic theory, supported by a number of empirical studies, finds that categorical, matching grants induce a significantly larger budgetary response than non-matching, lump-sum aid.[11] Matching grants for specific programs not only provide funds but, at the same time, lower the unit cost or price of the supported services and limit opportunities for the funds to leak into state or local tax relief. The empirical estimates, moreover, suggest that the magnitude of this stimulative effect is quite large, much larger than the effect of unconditional grants on state and local spending. Thus, the shift in the structure of the intergovernmental grant system away from categorical to block grants should, in itself, reduce the expansionary impact of federal grants on state-local budgets.[12]

Second, the eventual turnback of programs, along with sources of funding, is likely to have a net contractionary effect. The argument

[11]For a useful survey of the empirical work on the budgetary effects of intergovernmental grants, see Edward M. Gramlich, "Intergovernmental Grants: A Review of the Empirical Literature," in Oates, ed., *The Political Economy of Fiscal Federalism* (Lexington, Mass.: Heath-Lexington, 1977), pp. 214–240.

[12]This reduction in the stimulative effect of grants will probably be cushioned somewhat in the transition period by the existing clientele for the categorical-grant programs. States and localities may find, in the short run, that they expend a larger fraction of block-grant monies than purely unconditional funds to meet the expectations of certain groups who previously received support under the categorical programs. See Barfield, chap. 4.

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here is a bit more subtle and intriguing. Consider, for example, the elimination of a broad block grant for education accompanied by a reduction of the federal taxes that support this grant. The analysis from the preceding section suggests that we can regard the block grant monies as essentially unrestricted funds. The implication is that the loss of grant funds to a state or local jurisdiction is equivalent to a reduction in its revenue sharing allocation. At the same time, however, federal taxes are being cut so that (neglecting distributional effects) the jurisdiction's tax base is being increased by the same amount. The turnback exercise effectively takes unrestricted funds away with one hand and gives them back with the other.

From this perspective, one might conclude that turnbacks would have no net effect on state-local budgets. The implicit assumption here is that a dollar of unrestricted grant funds to a local jurisdiction should have the same effect on local spending as a dollar increase in private income. This seems reasonable, since in either case the disposable income of the community has increased by the same sum. It is not hard to demonstrate this equivalence formally; the theoretical literature shows that, subject to certain conditions, a lump-sum intergovernmental grant to a community is fully equivalent in all its effects to a federal tax cut directly to the individuals in the community.[13] This proposition is known among public-finance specialists as the "veil hypothesis" (i.e., an unconditional intergovernmental grant is a "veil" for a federal tax cut).

Empirical work has not, however, in this instance, confirmed the theory.[14] Instead, various studies of the effects of nonmatching aid find that unrestricted intergovernmental grants have a significantly more expansionary impact on state and local spending than do equivalent increases in private disposable incomes. This finding is known in the literature as the "flypaper effect" (i.e., money sticks where it hits). Moreover, it has been of considerable interest among public-finance scholars and has led to a lively exchange involving the development of competing theories and of further empirical work. Assuming that there is something to the flypaper effect, it follows that the budgetary impact of a reduction in block (unrestricted) grants accompanied dollar-for-dollar by federal tax cuts will not net out to zero; the contractionary effect of the reduced grants will more than offset

[13]D. Bradford and Oates, "The Analysis of Revenue Sharing in a New Approach to Collective Fiscal Decisions," *Quarterly Journal of Economics* 85 (August 1971): 416–39.

[14]See Gramlich.

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the stimulus from increased private disposable income.[15] The implication of this proposition is that state and local governments will not increase their own levels of taxes sufficiently to offset fully the loss of grant revenues.

The bottom line is that both the consolidation of categorical grants into block grants and the turnback of grant programs and tax bases to state and local governments should work in the direction of a reduced stimulus to state-local expenditure. I should expect only a small fraction of the cutbacks in existing federal grant support to be replaced by increases in state and local taxation. Finally, I want to emphasize here that I am *not* arguing that this is necessarily an undesirable outcome. Whether state and local spending is, at present, excessive or deficient involves another set of issues. My intent here is purely descriptive: to predict the effect of the New Federalism programs (for ill or good) on the size of state-local budgets.

Urban Assistance: The Enterprise Zone Program

Although not specifically a part of the New Federalism, the recent administration proposal for the creation of enterprise zones to aid recovery of "the decaying areas of America's inner cities and rural towns" is relevant to intergovernmental fiscal efforts. The concept, which originated in Great Britain and has gained considerable support in the U.S. Congress, calls for the designation of specific zones for the application of special economic incentives to encourage new business investment.

The rationale for the zone approach to urban recovery has a number of facets. First, there is an economic efficiency argument involving neighborhood externalities. The argument envisions a continuing process of urban decay in which the closing and departure of firms and the associated loss of jobs and abandonment of buildings create a progressively more unfavorable environment for existing firms and any prospective new business enterprise. There is, in short, a kind of vicious circle that leads to a process of cumulative deterioration. To reverse this process requires special measures that endow the area with particular attractions for business in the expectation that the advent of new firms will eventually change the economic environment of the area and give the recovery a self-sustaining character. Second, there is an equity argument. The economic decay of center cities has left many of the urban poor without access to nearby jobs

[15]For a useful collection of studies exploring the flypaper effect and related issues, see P. Mieszkowski and W. Oakland, *Fiscal Federalism and Grants-in-Aid* (Washington, D.C.: The Urban Institute, 1979).

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at appropriate skill levels. Enterprise zones, it is argued, can bring such jobs to depressed areas (and may well be cheaper than the income transfers needed to support the poor and unemployed).

On March 23, 1982, President Reagan presented the specifics of his Enterprise Zone Tax Act to Congress. In his words, "The idea is to create a productive, free-market environment in economically-depressed areas by reducing taxes, regulations and other government burdens on economic activity." The major elements of the proposed program are:

1. Tax reductions and credits including a three- or five-percent investment tax credit for capital investments in personal property in an enterprise zone, a 10-percent tax credit for the construction or rehabilitation of commercial, industrial, or rental housing structures within a zone, tax credits for employers for new hirings in a zone (with an increased credit if the new employees are "disadvantaged individuals" when hired), elimination of capital-gains taxes, and certain other tax breaks;
2. Regulatory relief (largely unspecified but *not* including suspension of the minimum wage) at federal, state, and local levels;
3. Improved local services;
4. Involvement in the programs of neighborhood organizations.

The proposal has very little to say about the last three components of the program. This is, in part, because much of the initiative is to come from state and local levels. "Consistent with the Administration's policy of Federalism," Reagan said, "the Federal Government will not dictate to state and local governments what they must contribute to the zones. The program is designed for creative and innovative experiments by state and local governments within the zone areas." State and local authorities would nominate zones in a competitive application process; the Secretary of HUD would in turn select from the applications up to 25 zones in each of three years. The life of these zones would be determined by the nominating government, with a maximum duration of the federal incentives of 20 years plus a four-year phase-out period.

Does the Enterprise Zone program possess the potential for an economic rejuvenation of decayed inner-city areas? In addressing this question, it is important to recognize the limited character of the proposed program. The measures will apply only to certain designated zones in those cities (or "rural towns") which make application for support and whose applications are selected by the Secretary of HUD. This is not a broad-based program directing resources to all depressed urban areas. As Representatives Jack Kemp (R-N.Y.) and

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Robert Garcia (D-N.Y.) said of their version of the bill: "It is no panacea. Neither is it intended as a substitute for other urban proposals. It is simply a relatively low-cost attempt to try something new, at a time when we can't turn our backs on any new approaches to unemployment and economic decay."[16] So the question must be whether or not enterprise zones can succeed in their more modest objective of stimulating economic development in selected areas.

This is not an easy question to answer in part because the program in each zone would have a distinctive character determined by the respective state and local authorities. However, there are a number of reasons for believing the potential of enterprise zones to be quite limited.

1. The basic premise of the program is that the choice of location for business investment is reasonably responsive to fiscal incentives. There is not much evidence to support this proposition. A number of economists have examined locational patterns of new investment in relation to fiscal differentials and haven't been able to find much.[17] This work is far from conclusive, but it would be fair to say, I think, that tax differentials do not seem to exert a substantial impact on business location.[18]

2. To the extent that certain firms are on the "margin," they may be induced to locate in a new enterprise zone. However, a large fraction of such businesses are likely already to be committed to the city in question; consequently, they may decide to locate in the zone instead of elsewhere in the city. In such instances, the program will simply rearrange economic activity within the city with little overall impact.

3. Some critics have emphasized that the program fails to address the crucial issue of making available new capital for investment in the zones. One survey of small urban businesses found their most pressing concern to be the shortage of available business capital

[16]"Enterprise Zone Strategy Keys on Senate," *Baltimore Sun*, April 5, 1982, p. A1.

[17]For a good survey of this body of research, see Oakland, "Local Taxes and Intraurban Industrial Location: A Survey," in G. Break, ed., *Metropolitan Financing and Growth Management Policies: Principles and Practice* (Madison: University of Wisconsin Press, 1978), pp. 13–30.

[18]In contrast, there is evidence that suggests considerable mobility of households in response to differentials in local services and taxes. One strand of this evidence is the finding of "capitalization" – the demonstrated willingness of individuals to pay more to live in jurisdictions with better services and lower taxes. See, for example, Oates, "The Effects of Property Taxes and Local Public Spending on Property Values: An Empirical Study of Tax Capitalization and the Tiebout Hypothesis," *Journal of Political Economy* 77 (November-December 1969): 957–71. A second line of work has detected

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manifested in high interest rates.[19] This, of course, is largely a matter of the existing state of the national economy.

4. What is perhaps more basic are the underlying obstacles to economic growth in depressed urban areas: crime, poor work habits, and a general air of demoralization. It seems unlikely that the proposed system of zones, relying heavily on tax credits, can convince large numbers of small businesses that new ventures in deteriorated urban neighborhoods are economically viable. This is not necessarily to condemn the proposed program, for it is obviously no simple matter to eradicate these fundamental obstacles to economic revitalization. It should, however, serve to temper our expectations.

5. Finally, it is worth noting the magnitude of the proposed spending on the program: $124 to $310 million in the first year. One professed objective of enterprise zones is to offset in part some of the effects of the Accelerated Cost Recovery System (ACRS), a part of the tax bill passed last summer, that apparently will benefit primarily the Sunbelt and suburbs. But the ACRS provisions are expected to cost the Treasury some $50 to $60 billion per year. It is hard to believe that a program the size of the administration's enterprise zones can go very far in offsetting the geographical impacts of ACRS or, more generally, in making a real dent in the problems faced by the older central cities.

Conclusion

It is time for a reexamination of the U.S. federal system with particular attention to the clarification of the responsibilities of the different levels of government and a long overdue restructuring of the intergovernmental grant system. The evolution of American federalism in recent decades has exhibited a distinctly helter-skelter character with a resulting maze of overlapping intergovernmental programs and blurring of functions. The administration's concern with a return to "first principles," involving a withdrawal of the federal government from excessive involvement in many basically state-local matters, is to be commended.

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the movement over time of households away from fiscally disadvantaged communities to those providing net fiscal benefits. See J. R. Aronson and E. Schwartz, "Financing Public Goods and the Distribution of Population in a System of Local Governments," *National Tax Journal* 26 (June 1973): 137–60.

[19]"Enterprise Zones Proposal is Criticized," *Wall Street Journal*, April 12, 1982, p. 25.

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At the same time, the more one probes into the specifics of the New Federalism, the more one becomes aware of the troubling absence of any vision or outline of the proper structure of our federal system. The administration has not provided any real guidelines for making the distinction among federal, state, and local responsibilities. There is, for example, no apparent principle underlying the proposed swap of welfare programs for Medicaid. Moreover, the attempt to shift the basic responsibility for income-maintenance programs to the state and local levels is, I believe, fundamentally misguided and puts in jeopardy the prospects of the nation's poor.

A further manifestation of this absence of vision is evident in the administration's approach to the consolidation of grant programs. While such consolidation is surely justified in many instances, it is not to be pursued indiscriminately. Many categorical grant programs have a sound rationale and perform an important function in terms of encouraging state and local activity on matters in which there exists a broader national interest. In such cases, a narrow program, carefully targeted on a quite specific objective and providing aid conditional on its use to promote that objective, is appropriate. To push such programs under the umbrella of block grants effectively undermines their role. What is needed is a careful assessment, program-by-program, to determine which categorical grant programs are the proper subject for consolidation (or extinction) and which have a legitimate role to play in our intergovernmental system – not a headlong rush into the consolidation of all accessible categoricals.

A return to "first principles" may well be desirable, but we do need some sense of what those principles are.

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PUBLIC POLICY AND THE LIMITS OF ECONOMIC ANALYSIS

Randy E. Barnett

In any discussion of important public policy issues, an economic analysis is useful and welcome. It is difficult to assess the desirability of a particular policy proposal without some understanding of its likely effects. This is particularly true when considering government practices of taxing and spending, where the economic effects of such practices can be widespread, complicated, and counter-intuitive. Problems arise, however, when economists wittingly or unwittingly stray from their area of expertise to make moral judgments or recommendations about the effects they have identified.

For one thing, it is unclear how an economist is any more qualified to judge the desirability of whatever economic effects may occur than any other thoughtful citizen.[1] Moral judgments in this context are likely to be mistakenly imbued with the economist's credibility as an expert in economics. This danger would be aggravated by any failure to clearly separate economic analysis from moral or political judgment since even a thoughtful reader may have difficulty discerning the boundary between the two types of claims.

Cato Journal, Vol. 2, No. 2 (Fall 1982). Copyright © Cato Institute. All rights reserved.

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This article was written while the author was a Research Fellow at the University of Chicago Law School.

[1]The enterprise of recommending certain legal rules on the basis of an economic analysis has been subject in recent years to a similar critique. See generally the "Symposium on Efficiency as a Legal Concern," *Hofstra Law Review* 8 (1980):485–770; and especially Mario J. Rizzo, "The Mirage of Efficiency," pp. 641–669. See also Ronald Dworkin, "Is Wealth a Value," *Journal of Legal Studies* 9 (1980):227; Richard S. Markovits, "Legal Analysis and the Economic Analysis of Allocational Efficiency," *Hofstra Law Review* 8 (1980):811; and Lawrence G. Sager, "Pareto Superiority, Consent, and Justice," p. 939.

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The problem of the economist as public policy analyst is nowhere better illustrated than by Wallace Oates' paper, "The New Federalism: An Economist's View." Professor Oates' analysis of the "New Federalism" is dominated by two arguments. The first is that a transfer of responsibility for welfare programs from the federal government to the states will result in a net reduction of spending (and taxing) in this area. The second is that converting federal matching grants to block or unconditional grants will result in a net reduction of spending (and taxing) in the areas of the grants. This comment will concern the first of these observations.

Some Costs of the Status Quo

Professor Oates makes the argument that local governments are limited in their ability to provide relief to the poor by the perception, if not the reality, that those net taxpayers who must pay for these measures will move if taxes rise above a certain level. In other words, taxes are obtained from individuals by a threat of force to be spent in a way that they assumedly would not freely choose if their money was not expropriated—else why tax in the first place? Yet if at the same time individuals' rights to freely spend their income are denied, their right of free migration, that is, the right to move their legal residence from place to place, is recognized, individuals may effectively resist coercive taxation by leaving the relevant jurisdiction. And the knowledge that they might leave is itself enough to inhibit local taxing authorities.

Professor Oates also mentions the flip side of free migration: that poor people will migrate to where welfare payments are relatively high, thereby raising the levels of taxes needed to support the programs and exacerbating the flight of the net taxpayers. "In short, mobility within a federal system imposes real constraints on the scope for decentralized redistributive policies."[2] Federal taxation avoids this result to a considerable extent by extending the coercion uniformly to all net taxpayers in this country. Only by the sometimes difficult steps of renouncing one's citizenship and expatriating for at least a decade can one avoid this imposition. Such an analysis, however, which is as far as Professor Oates goes in his paper, does not go far enough.

First, a purely economic analysis of this "problem" created by free migration does not lead only to a "solution" of federal taxation. One might with equal logic oppose the right to freely migrate. If net

[2]Wallace E. Oates, "The New Federalism: An Economist's View," *Cato Journal* 2 (Fall 1982):475.

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taxpayers want to avoid paying their "fair share" by moving, the government might simply not let them move or might permit local jurisdictions to continue to tax those that do move. This option is and should be rejected because it is morally reprehensible to deny individuals their right to choose where they will live. And yet denying these same persons the right to choose how their earnings are spent finds a much more receptive audience. I suggest that any preference for one solution over the other reflects more than an economic judgment.

Of course Professor Oates does not contend that local tax-based financing of welfare programs would cause their elimination. He recognizes that the exercise of a right to freely migrate is not cost-free. Indeed, in the case of a large business it is quite costly. Even individuals, with their emotional as well as financial ties to their homes and regions, are willing to withstand major impositions before they will vote with their feet.

Professor Oates' only claim is that local taxation will net a marginally lower amount of tax revenues and goes on to assert that this "may well undermine efforts to provide adequately for the poor."[3] He does not provide any definition of the term "adequate" nor evidence that, however defined, local spending will not in fact be adequate. He nevertheless concludes that "the attempt to shift the basic responsibility for income-maintenance programs [from the federal] to the state and local levels is, I believe, fundamentally misguided and puts in jeopardy the prospects of the nation's poor."[4]

Since he gives no indication of the degree to which spending in this area will be reduced if the proposed shift of responsibility takes place, his conclusion can only mean that *any* net reduction of spending in this area will not provide the level of aid to the poor that Oates thinks is appropriate and therefore desirable. It is not obvious, however, what the needs of the poor really are and what level of support they require. And, however "need" is defined, it is likely to vary, just as wages vary, according to regional differences in economic conditions, types of employment opportunities, and costs of living. Without some such analysis I fail to see how any decreased level of net expenditures can be labeled "inadequate" per se.

Such a conclusion must be supported by establishing on noneconomic grounds some goal or standard against which efforts at aiding the poor can be evaluated. For example, if the level of assistance that is thought to be desirable is some minimum amount in emergency

[3]Ibid., p. 479.
[4]Ibid., p. 488.

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circumstances, and current levels of taxing and spending exceed this standard, then, by the economic reasoning presented here, local taxation with its constraint of free migration might be perfectly adequate to this task. Indeed, if this is the desired level of assistance, the negative implication of Oates' analysis is that it would be much harder to keep a federal scheme at this level.

It may be simply impossible to prevent a growth in welfare-type taxing and spending because of the ineluctable interest group pressures favoring increases and the relatively diffused interests of the net taxpayers who are the targets of the increased level of taxation. As with any person or group that receives most of its income from taxes, the interest of each welfare recipient is clearly defined. With respect to any given program, the interest of the taxpayer is relatively much less, since only a small fraction of a taxpayer's income contributes to any one program. Each welfare recipient or group, therefore, has a lot at stake in preserving and expanding "benefits," while each taxpayer has considerably less at stake in opposing these increases. A plausible argument can be made that where power is relatively centralized and therefore vulnerable to a concentrated lobbying effort, as it is on the federal level, this pressure becomes all the more irresistible. It is difficult to refute or confirm this effect, however, by assessing the rise or fall of benefits adjusted for inflation, as Oates suggests in a footnote,[5] since any such analysis must be counterfactual in nature.

Even without interest group pressures politicians have a multitude of incentives to consistently advocate increased spending in these areas that Oates might have considered. When all these factors are taken into account and a different set of funding goals is assumed, Oates' economic analysis could be seen as favorable to this aspect of the New Federalism proposals. State and local funding with the constraints Oates identifies would be preferable to federal programs which know only the most limited of constraints.

Oates' economic analysis only concerns differential expenditures among local taxing jurisdictions; consequently, his analysis says little about what aggregate spending levels would exist at the state and local level. His non-controversial contention is that significant disparities among jurisdictions will impose costs on those offering higher benefits, and this will provide a disincentive to increasing expenditures at a faster *rate* than other jurisdictions.

There is nothing in the argument that precludes a gradual or not so gradual rise in local spending nationwide provided no significant

[5]Ibid., p. 479, n.7.

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relative disparities appear in the rates of increase across jurisdictions. If all increases in local taxes and spending are in rough proportion to existing taxing and spending levels, migration of either net taxpayers or net tax recipients will not occur as a result and will therefore provide little constraint on a general nationwide increase in such taxing and spending programs. While there may be reasons why such aggregate increases in spending are likely to be less extreme on the local level than at the federal, it would be wrong to question on the basis of Oates' analysis the possibility of continued increases of aggregate spending on local income-maintenance programs.

Surprisingly, what is overlooked in this economic analysis is the economic effects of massive federal welfare programs of the sort that now exist. If a cost-benefit calculus is possible in such matters (which is doubtful), the costs of the present approach must be weighed against its purported benefits. Oates, however, neither considers nor acknowledges the existence of these costs.

The costs of such programs might include: the effects of high taxes on the productivity of net taxpayers; the incentive effects of welfare payments on their recipients and how this affects the aggregate amount and relative distribution of wealth in society; and the effects on private charitable giving from the public's perception that its tax payments are "adequately" caring for the poor. (One would anticipate marginally lower private contributions, though this effect will be distorted by the tax-deductible nature of the charitable contributions.) It is also likely that the incentives created by targeting a particular group for increased support (e.g., single parents with children) will increase the number of persons in that group relative to the number that would exist without the subsidy.

Other harmful, noneconomic consequences of such programs might include: the subservient position recipients must necessarily assume vis-à-vis the bureaucrats distributing the funds, creating political as well as economic dependence; the adverse effect this has on individual self-image; and the effects on family structure and cohesiveness created by politically mandated restrictions on recipients such as restricting some forms of aid only to households where no adult male is present. Further, the social consequences of creating a class conflict between those that are net taxpayers and those that are net tax recipients cannot be ignored. Such a conflict breeds resentment, bigotry, and violence that threaten to unravel the fabric of a civilized and humane society, upon which altruistic instincts depend.

In evaluating the efficacy of government assistance programs, one could discuss what percentage of total expenditures actually reach the poor and whether any marginal differences exist between federal

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and local programs. One could then ask whether the primary beneficiaries of extensive tax-funded welfare programs are not the poor, but the white-collar bureaucrats paid handsomely for their "public service" and the farm sector paid handsomely for their surplus production.[6]

A cynic might argue that massive welfare programs are a way of mollifying those classes of citizens who are denied access to the traditional modes of economic advancement by protectionist government interventions in the labor market (such as minimum wages and compulsory unionism). If, to benefit some, the upward mobility of millions of other people at the lowest rungs of the economic ladder is impeded, a program of subsistence support may be required to prevent some of these persons from turning to violence. On this view, the real beneficiaries of such programs (in addition to the bureaucrats) are those who benefit from government protectionist intervention in the marketplace. This provides another potent constituency for income maintenance programs. While the beneficiaries of this protection might pay taxes, they obviously profit by the assistance programs at the expense of fellow taxpayers whose jobs and wage levels are responding to genuine market demand and who therefore need no such protection. This would also explain why a coalition that effectively supports the existence of such programs might break down when considering the level of funding that is desired, since members of the coalition may have different objectives to satisfy.

While Professor Oates mentions the effects of welfare disparities on local-level on intranational migration, he does not show how the higher amounts of federal welfare expenditures he favors affect *international* migration. It is quite clear that higher welfare payments would marginally increase the incentives for poor persons to enter the United States, just as higher taxes would be a disincentive for wealthier individuals who might otherwise have immigrated. To the extent that this would cause a greater burden to fall on net taxpayers, all the effects mentioned thus far would be seriously aggravated. We may today be witnessing the fruits of this sort of welfare policy.

But the situation is worse still. When relief was largely voluntary and therefore more strictly controlled and primarily for emergency use, there was no excuse for excluding those who were poor from

[6]This food is "surplus" in the sense that without the subsidized demand provided by food stamp programs, for example, overall prices would grow at a lower rate, encouraging capital to flow to other sectors of the economy. Or if supply is maintained, overall prices would decline, benefiting all, but benefiting most those that spend a higher proportion of their income on food – the poor.

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immigrating, other than racism or the economically and morally invalid claim that immigrants would deprive current residents of their jobs. Today, while these motives are still with us, the most common reason advanced for closing the borders to the poor is the much more respectable and plausible claim that these immigrants will exploit welfare benefits (and, indeed, all public programs, such as public education). Such an argument is strengthened by a belief that once on welfare it is difficult for a recipient to be weaned from it.

As a consequence, in the name of helping "our" poor, pressure is generated to spend large sums of the taxpayer's money (with inconsistent effectiveness and with occasional brutality) to exclude "foreign" poor from the freedom and opportunities this country has to offer. A black market for illegal immigrants has therefore arisen where coercive immigration laws can be employed by black marketeers to genuinely exploit these people. Those immigrants and potential immigrants who may suffer the most from a fixed focus on the supposed "beneficiaries" of the current system are unknown, unknowable, and largely disenfranchised, but nonetheless very real. Who speaks (or lobbys) for them?

Professor Oates cannot be faulted for failing to analyze every factor I have mentioned. To do so would have required a much longer treatment than I am sure was possible. The criticism here, however, is that his economic conclusions have far outpaced his analysis. At most, he has identified one possible effect of the New Federalism proposals. A much more thorough economic inquiry is required before any other economic conclusions can be made.

The Need for a Moral Framework

More than an economic analysis must be offered, however, before one is justified in concluding that these proposals are "fundamentally misguided." What is required is a defensible moral framework. This Oates attempts to provide largely by assumption and by a novel application of the otherwise familiar "public goods" argument.

According to Oates, any significant decrease in tax-funded spending in this area would not sufficiently amend "the market-determined distribution of income and wealth to one which better satisfies our objectives of social equity (particularly of providing adequate assistance to the poor)."[7] He asserts that

> on purely equity grounds, one can contend that a "fair" resolution of the poverty problem requires central-government participation .... [I]t seems unfair to allow certain higher-income individuals to

[7]Oates, p. 474.

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> avoid their share of the burden of financing income-maintenance by [re]locating in states or localities with a relatively low incidence of poverty. A fair system . . . requires central funding of assistance to the poor that spreads the burden evenly over the non-poor residents of the nation.[8]

Of course the moral justification for income redistribution, the concepts of "social equity" and "fairness," and even what constitutes "adequate" assistance to the poor are not within the domain of economics. As an economist, Professor Oates can only assume certain goals and analyze whether they are likely to be achieved by a given proposal. It is important that moral assumptions not be confused with economic analysis. Any extended discussion of these assumptions in an article that purports to be "an economist's view" runs this risk. After all, what other purpose does this discussion serve, once the effect of lower net spending is identified, except to reinforce his view, as an *economist*, that the New Federalism proposals are "fundamentally midguided?" The moral issues raised by this discussion are too important for this type of treatment.

A serious analysis of this question would have to explain how the supposed legal obligation of those who are better off to provide for those with less only applies within the arbitrary borders of this country. How does a net taxpayer of Nogales, Arizona, come to owe a legally enforceable debt to a lower-income resident of the South Bronx, but not to a possibly even poorer resident of Nogales, Mexico who will be imprisoned if he tries either to collect his "fair share" by force from his Arizona neighbors or, more likely, if he tries to enter this country without permission and sign up for this support? And on what basis do we resist the demands of Third-World governments to collect their "fair share" of the American taxpayers' earnings to distribute to their citizens, the majority of whom may be worse off than our poor?

One might believe, as I do, that those who help the less fortunate are doing good. But more than this is required to show that the less fortunate or well-intentioned third parties have a right to confiscate the property of others for this redistributive purpose. And, the issue of individual rights aside, the "morality" of aid to the poor that is not freely chosen but is coerced, or of those who advocate this coercion may also be questioned. By raising these issues I do not intend to argue the merits of the moral case for or against coerced assistance to the poor. I do so to illustrate the extent to which the discussion of

[8]Ibid., p. 476.

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these sorts of moral assumptions cannot be avoided in any article that attempts to engage in this kind of public policy analysis.

Professor Oates offers another argument, which he labels "economic," to justify

> a basic central role [for the Federal government] in the funding of income-maintenance programs. This argument is based on the presumed concern of individuals with the alleviation of poverty in all parts of the nation. In economist's jargon, assistance to the poor possesses some of the properties of a "public good" in that such assistance in one state confers not only benefits directly to the recipients themselves, but also contributes to the well-being of the non-poor across all states. From this perspective, support from the central government becomes the instrument through which the national concern with poverty expresses itself in the income-maintenance programs in the individual states.[9]

Together with a footnote, this is the entire discussion of the matter, so it is difficult to know what to make of it. Taken at face value, such an argument proves too much or nothing at all. If individuals are concerned with the alleviation of poverty in all parts of the world, then by the same reasoning assistance to the poor worldwide is a "public good." Would this justify a central world government through which international concern with poverty (or any other worthy moral cause) can express itself? If so, one would expect that more than this would be required to establish the point.

Such an argument is tantamount to asserting that any and all charitable concerns are public goods. And it is doubtful that this kind of argument is at root an economic one. Further, the public-goods argument is primarily concerned with justifying coercion to collect payments from so-called free riders who enjoy benefits they have not paid for, and who thereby discourage others from assuming the costs of these "external benefits." Of course the fact that coercion may be required for the funding of a particular benefit does not morally justify the use of that coecion. To identify a "public good" is not to justify its forcible provision.

This is not the appropriate forum, however, to weigh the merits of this type of argument. Indeed, whatever the merits of this argument in general, it certainly is misapplied here. The public-goods analysis says only that coercion may be necessary, not that nationwide or worldwide coercion is preferable to state and local coercion. To support the assertion made here, Oates must do more than suggest that a "central" government must provide this "good;" he must demonstrate *which* central government must supply it. Ultimately the

[9]Ibid., p. 476.

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principal deficiency of such an argument may be that determining who is a free rider enjoying what benefits at the expense of which others is a rather arbitrary and possibly impossible task with no relevant purpose.

Oates' analysis must then rest on his prior point: "A community may wish collectively to establish what it sees as adequate support for its low-income residents, but be unable to do so because of the prospective movement of economic units that such a program would encourage. In this way, mobility may effectively prevent a community from doing what its members want to do."[10] By this reasoning Oates appears to base his case for coercion on the consent of the "community," and suggests that an adequate level of support for the poor is what the community "collectively . . . sees as adequate."

Without the assumptions of a "public goods" analysis, however, such reasoning begs the issue since force would not be needed unless some members of the community did not want to spend their money in this way. To speak of the community as if it was a person with a will of its own that "wishes" things and makes judgments of "adequacy" is to imbue society with properties it does not possess and thereby to reduce the individual to nothing more than an "economic unit," which is precisely the term Oates employs without apology or embarassment.

Professor Oates would have done well to observe the same restraint here that he showed in his analysis of the effects of substituting block grants for categorical grants and the proposed turnback, in other areas, of grant programs and tax bases to state and local governments. There he took pains to emphasize that he was "*not* arguing that [any predicted reduction in net expenditures that may result] . . . is necessarily an undesirable outcome. Whether state and local spending is, at present, excessive or deficient involves another set of issues. My intent here is purely descriptive: to predict the effect of the New Federalism programs (for ill or good) on the size of state-local budgets."[11]

Conclusion

In this paper Professor Oates combines some limited economic conclusions with some ambitious and controversial moral assumptions to produce "an economist's view" of the New Federalism proposals. Even if this paper were confined to economic analysis or its

[10]Ibid., p. 475.
[11]Ibid., p. 484.

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misleading title was changed, there would remain serious substantive difficulties of the sort I have described.

The only conclusions, if any, warranted by the economic analysis presented here are quite modest indeed, particularly if they are tempered by the multitude of economic effects that are left unmentioned and unanalyzed. It might turn out that if all the economic effects of federal welfare programs were identified, *no* economist would be capable of weighing whatever benefits are yielded by those programs against the costs imposed by them. The appropriate economist's view of the New Federalism, in the sense of approval or disapproval, might just be a shrug of the shoulders.

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THE POST-INTERVENTIONIST CITY

John W. Sommer

The contemporary American city serves as evidence of "government failure" and as a focal point for crisismongering. In this paper I argue why it is important for Americans to reject the "city as crisis" syndrome and to move to a view of the city as an increasingly malleable landscape formed by the dynamics of market processes and dotted with opportunity. Such a city is most responsive to human aspirations when government is least intrusive. At no point do I argue that the market provides an immediate remedy to all human conditions I wish to see improved. No do I argue for the dissolution of government, though I do favor drastically diminished government intervention in the cities, both to improve the potential for economic performance and to secure greater personal liberty. A freely operating market cannot guarantee relief from all that ails humankind, nor can governments through the employment of coercive powers. In contrast to government, however, the market will enlarge opportunities for *voluntary* exchange, stimulate private initiative, and promote the growth of consumer-oriented production. Moreover, individuals who are less burdened by government may be more responsive to ethically based appeals for voluntary contribution to the redress of conditions each finds offensive.

I contend that an entirely different way of thinking about the nature of urban conditions is required to improve the urban environment, one which emphasizes the pursuit of possibilities over the promotion of problems. The open-ended search for possibilities in an infinite universe is a dramatically different approach than the search for appropriate adjustments to received conditions which are assumed to be functionally finite. The first is a market view requiring freedom;

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the second is political, requiring intervention. Lachman senses this difference in his recent remarks comparing Austrian economic thought with Keynesian interventionist approaches.[1]

The "urban crisis" vanishes before our eyes as we adopt a view of the city as a concentration of people and property, each with varying mobility over time, rather than as an organic entity that requires external resources to support it when it is "ailing," or which may be tapped when it is "well." If we consider the landscape as a continuous surface of opportunity across which we search for satisfaction, it is hard to regard cities as sacred spaces for which the rules of the search should be suspended or altered to favor one individual or group over another. Yet that is precisely what is sought through the political process.

The "urban crisis" is a contrived concept that requires one to accept cities as organic wholes that should be prevented from decaying (loss of population and purchasing power and actual physical deterioration) or disappearing altogether. Those who promote this concept of urban immutability hold their mission of saving the cities to be sufficiently important to warrant the coercion of others in its achievement. The great promoters of "crisis" thinking are the politicians and bureaucrats who thrive on the electorate's fear of imminent devastation which can only be averted by adoption of their programs. They are incredulous when challenged on the sacredness of urban places, the piety of their supporters, or the purity of their own intentions. Of course, many political and bureaucratic careers depend on widespread and deep belief in the "urban crisis," which requires their brand of intervention.

Apart from the therapeutic injection of positive thought into an essentially negative forum, one hopes that this paper will encourage individuals to confront the crisis mongers to demand a premise for their argument.

The intent of this paper is to urge a replacement of the popular paradigm of "urban crisis" with one of "opportunity," to create the "post-interventionist city." Creating such an environment depends on the general acceptance of ideas like those expressed in this paper. The post-interventionist city would require dramatically reduced government intervention in the social and economic life of urban Americans, indeed, more than is implied in the New Federalism of the Reagan administration.

[1]"Austrian Economics: An Interview with Ludwig Lachman," *Institute Scholar* 2 (February 1982):6.

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But why is the city the focus for this discussion? Is not the issue of government intervention pervasive? One might answer by quoting Hayek's assertion that "almost all that distinguishes civilized from primitive society is intimately connected with the large agglomerations of population that we call 'cities,' and when we speak of 'urbanity,' 'civility,' or 'politeness,' we refer to the manner of life in cities . . . ."[2] But more than an appeal for civility, we can offer two reasons that sufficiently justify our focus on the city. The first is simply that America is a nation of urbanites, the vast majority of whom live in cities and who are chiefly affected by government action. The second is that cities are relatively compact areas wherein the effects of government policy may be observed in the actions of city dwellers and in the creation or destruction of capital.

Cities have been the nexus of human interaction for nearly 10,000 years, and their persistence is testimony to the value of information. Concentrated information, as one finds in cities, presents many possibilities. Possibilities promote choice. Individual exercise of choice *is* liberty, but liberty may be sustained only if constrained by a rule of non-injurious action toward the property and person of another. Cities offer both choice and a complex challenge to human organization to assure individuals the protection of their rights. How these choices are exercised and how methods for protection of rights evolve depend upon the degree of flexibility in the rules adopted by society.

In the remarks that follow I discuss the "city as crisis" as a replaceable paradigm, focusing first on contemporary urban conditions and on central authoritarian responses, left and right. I then turn to the outline of a post-interventionist city and the consequences of its adoption.

The Urban Crisis

The concept of an urban crisis has proved to be a useful political idiom for at least 20 years. Blair and Nachmias cite Senator Abraham Ribicoff's 1966 testimony in this regard. "The crisis of our cities is the crisis of the modern United States. Seventy percent of all Americans now live in or close to cities. The number grows each year. So the fate of the city and the future of our country are one and the same thing."[3]

[2]Friedrich A. Hayek, *The Constitution of Liberty* (Chicago: Chicago University Press, 1960), p. 340.

[3]John P. Blair and David Nachmias, *Fiscal Retrenchment and Urban Policy*. Urban Affairs Annual Reviews 17 (Beverly Hills: Sage Publications, 1979):11.

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The urban crisis basically refers to the decline of central cities since 1950 in terms of population, taxable wealth, and public services and the increase in unemployment, crime, and publicly dependent individuals as well as a host of associated social pathologies. The idea of urban crisis has come to mean much more since various interest groups have found it a convenient catch-all: Issues facing the aged, racial minorities, or immigrants are collected, repackaged, and magnified in urban crisis terminology as though being part of a larger category will lend additional credence to arguments for wealth transfer.[4] That these arguments have had a dramatic effect is made evident in estimates of the federal urban budget, which went from $3.3 billion in 1967 to $53.7 billion in 1979.[5]

In March 1979 the Subcommittee on Fiscal and Intergovernmental Policy of the Joint Economic Committee held hearings entitled, "Is the Urban Crisis Over?," largely, in effect, to assert that it was not.[6] The hearings were provoked by a spate of news articles, principally a *Harper's* piece by T. D. Allman, which suggested that fiscal conditions in central cities were improving.[7]

Congressman William Moorhead, a Democrat from Pennsylvania and chairman of the subcommittee, concerned with the oversupply of good news, stated that he was "deeply disturbed that many press articles have presented a misleading picture of our cities . . . " and " . . . the recent media attention to the fiscal condition of cities is misleading and may jeopardize both the existing and future Federal programs to assist cities."[8] "Crisis" consultants George Sternlieb and Thomas Muller were joined by other self-interested parties such as Robert Embry, then assistant secretary at the Department of Housing and Urban Development, Ronald Brown of the National Urban League, and Congressman Sedgewick Green of New York's 18th congressional district.

Each repeated the litany of despair over the urban crisis and each reasserted the need for federal intervention to save the cities. Green attacked "The New Partnership" of President Carter as rhetoric which had not led to improved conditions. Brown called for a 12-point

[4]William W. Goldsmith and Michael J. Derian, "Is There an Urban Policy," *Journal of Regional Science*, vol. 19, no.1 (1979):94.

[5]Ibid., pp. 97–99. The authors are appropriately cautious in their estimates and point out the difficulty of any such estimation.

[6]Joint Economic Committee, 96th Congress, March 20, 1979, *Is the Urban Crisis Over?* (Washington: Government Printing Office, 1979).

[7]T. D. Allman, "The Urban Crisis Leaves Town," *Harper's*, December 1978.

[8]Joint Economic Committee, p. 2.

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program of special federal attention to the urban poor, including a strong anti-displacement policy to forestall the pressures for the poor to move from the central city; Sternlieb argued that "not only is there a poor population which is a ward of the State in all forms, but increasingly the major cities, which were the children of business, are now the ward of the State."[9] It is hardly a surprise that Embry, a federal bureaucrat with as much at stake in the persistence of an urban crisis as the urban congressman, the lobbyist, and the consultant, would conclude the hearing with a ringing statement that "we [the government] do not accept the proposition that we must write off areas of the country [central cities] that appear to be uneconomic . . . ." and "we cannot adopt a policy that assumes that everyone has infinite mobility, that everyone can move from distressed areas to non-distressed areas because that is just not true in terms of education, resources, motivation, and family ties and neighborhood ties, and many other circumstances."[10] In other words, the federal government will work to keep uneconomic areas afloat and subsidize those who wish to remain there. In his prepared statement Embry says:

> . . . numerous American cities are still confronted by serious internal difficulties. We cannot wish or write them away. Instead, we must honestly address them. Solutions, however, may not always be readily apparent, given knowledge, resource, and institutional constraints. Nevertheless, by wisely using the resources and information at hand, we can continuously perfect or improve upon urban policies, strategies and programs. As President Carter has stated, "We reject the possibility of failure. We must commit ourselves to a long term and continuing effort to meet stubborn urban problems and changing needs."[11]

Their solution, then, is to redouble governmental efforts to find the right combination of public interventions that will save the cities. By "rejecting the possibility of failure" one invites infinite central authoritarian tinkering. Further, it rewards failure at the expense of success.

When President Carter's Commission on an Agenda for the Eighties delivered to him a nine-part report in his last days in office, one of the reports was rejected. *Policies and Prospects for Metropolitan and Non-Metropolitan America,* prepared under the guidance of Donald Hicks, spelled out a policy message that countered much of

[9]Ibid., p. 98.
[10]Ibid., p. 104.
[11]Ibid., p. 15.

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what remained of that administration's urban policy.[12] The rejected report was flawed in its persistent urging of a stronger federal role in the lives of individual Americans. It did a great service, however, in providing us with a dynamic view of cities in contrast to the conventional static view, which fostered the urban crisis mentality. As a result, urban special interests were stung and a brief, but heated, national debate ensued. Mayors such as Koch of New York City vigorously attacked the report.[13]

Leaders of various urban action groups and lobbying organizations lashed back immediately, but with the change to a new administration, whose urban policy was yet to be articulated, the furor subsided for a while. The clear lesson from these events is that many groups and individuals have a special interest in maintaining a belief in an urban crisis because their livelihood depends on it. In this sense the "urban crisis" differs little from the sundry international threats and "crises" which require our greater adherence to government and our greater expenditure of wealth for their prevention or mitigation. The crisis syndrome is not limited to cities, of course, but it is instructive to watch how its urban manifestation is kept alive.

As the Reagan administration's "New Federalism" has emerged, most of its urban intentions have not been specifically identified. The Enterprise Zone Proposal is an exception and will be discussed later. This lack of explicit policy has been criticized by those who have a stake in having a federal response to their particular urban crisis. The *New York Times* editorial page has hosted a variety of pleas for an urban policy since the advent of the New Federalism. The day before the Reagan inauguration, Enrique Arroyo, executive director of the Puerto Rican Congress of New Jersey, argued that urban policy in Carter's New Partnership had been as great a failure as urban policies in previous administrations. He added that Reagan's policy was likely to be a failure too because more and better federal urban policies were needed.[14]

George Raymond, head of a community planning consulting firm, added his call for a rational urban policy without explaining why such a policy should exist.[15] John Lindsay asserted that "the central

[12]Report of the Panel on Policies and Prospects for Metropolitan and Non Metropolitan America, President's Commission for a National Agenda for the Eighties, *Urban America in the Eighties* (Washington, D.C.: Government Printing Office, 1980).

[13]Clyde Haberman, "Koch Adminstration Assails Plan for U.S. Aid in Sunbelt Migration," *New York Times*, December 29, 1980.

[14]Enrique Arroyo, "Federal Urban Non Policy," *New York Times*, January 16, 1981.

[15]George M. Raymond, "Rational Urban Policy," *New York Times*, March 5, 1981.

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governments of most of these countries [in which major world cities are located] assume direct responsibility for their cities' well being. Our Federal Government must play the same role – and play it well."[16]

Former Great Society warrior Marshall Kaplan, who re-enlisted in the "New Partnership" as a deputy assistant secretary at HUD, stated, probably unknowingly, the basis for the central authoritarian agenda for urban policy:

> The Administration's existing and proposed block-grant programs, and its "New Federalism" proposals to transfer social-service programs to the states, do not reflect equity. Because there are no Federal standards governing distribution of funds to the needy, elected officials will not be able to allocate money to the poor and still stay in office. Their political life will be made harder by cutbacks in funds for programs folded into the proposed block grants and for programs that would be transferred to the states.[17]

Supplement these remarks with the blunt ideas of Neal Pierce, syndicated columnist at the *Washington Post*, who favors government intervention at every urban street corner to prevent what he sees as the inevitable rise of urban guerrilla groups and the eventual urban explosion.[18]

Central Authoritarian and Libertarian Perspectives

Let us consider in detail the arguments for the central authoritarian agenda, which advocates a politics of permanency, and contrast it with the libertarian proposals for the abandonment of intervention in favor of market processes and a commitment to change.

We have noted that the spokespersons for the "urban crisis" are many: city mayors and members of congress from urban districts, consultants and academics who offer advice which purports to solve problems, government bureaucrats whose positions depend on an unremitting view of society out of kilter, and political activists who seek to promote "equitable" distribution of other people's wealth at any cost. Add to these a cadre of socialist theoreticians upon whose arguments the "crisis" proposals and programs must be founded. I shall call this group "central authoritarians."

What distinguishes this group from libertarians is not their urge to influence human action, because that is common to everyone, but it is their willingness to employ coercion to achieve their ends. The employment of coercion is almost always done in the name of some

[16]John V. Lindsay, "Shaping Urban Policy," *New York Times*, February 5, 1981.
[17]Marshall Kaplan, "Adding to Urban Problems," *New York Times*, April 6, 1982.
[18]Neal Peirce, "Are Cities Ready to Explode Again?," *Dallas Times Herald*, April 25, 1982.

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putatively higher ideal than individual liberty, but the outcome is always meant to satisfy the taste of the coercer over those who are coerced. A second, more fundamental difference between the central authoritarians and libertarians is in the concept of order: Libertarians thrive on the constant unfolding of choice as new ideas infuse and enrich society, and these successive states are regarded as order. Central authoritarians regard these dynamic processual recombinations as chaos, which requires the imposition of order through controlling institutional structures.

Some central authoritarians may acknowledge the superiority of free markets for achieving economic progress. They will argue, however, that the cost of this approach in terms of negative externalities and equity is too great for society to tolerate. Thus, the authoritarian emphasis is on central (rather than individual) planning. Under such a regime preferred "rational" models of order are established and individuals must perform within the model parameters or be declared outlaws. In the city this might mean government-imposed zoning and other land-use regulation, or rent controls.

Those who have grappled with the externality issue have not found it easy to solve. Hayek acknowledges the difficulty of property rights solutions to externalities in cities in his work *The Constitution of Liberty*, even remarking that "the city, which is the source of nearly all that gives civilization its value and which has provided the means for the pursuit of science and art as well as of material comfort, is at the same time responsible for the darkest blotches on this civilization."[19] That a universally satisfactory answer of how to require individuals to pay for the costs they incur to others has not been achieved in the urban marketplace does not automatically argue for a solution requiring more government-administered controls and regulatory standards. Indeed, the opposite may be more useful. Hayek writes:

> There is probably no perfect answer to the real difficulties which the complexity of the problem creates. But only a method which operates mainly through the inducements and data offered to the private owner and which leaves him free in the use of a particular piece of land is likely to produce satisfactory results, since no other method will make as full use of the dispersed knowledge of the prospects and possibilities of development as the market does.[20]

A dynamic economy will always generate novel externalities, positive as well as negative, and a better defined set of property rights with rules of strict liability allows for flexible, incremental adjust-

[19]Hayek, p. 341.
[20]Ibid., p. 352.

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ments by all parties. These spontaneous solutions may proceed with the future in mind rather than relying primarily on the retrospective search for solutions to analogous (but never identical) questions in the past.

Concerning the second objection, the equity issue, there can be no dispute because a level of welfare not derived through market processes is a matter of taste. The libertarian can only answer that the act of sharing is legitimate as long as it does not violate anyone's rights. What is objectionable, of course, is the coercion of individuals to subsidize someone else's enthusiasm to share.

Taste, Choice, and the Urban Environment

Beyond the satisfaction of our material desires, each of us seeks to clothe our existence in a fabric of aesthetic quality woven from the threads of our various tastes and values. As with all of our attempts to satisfy our desires, we are delighted to reduce our expense by finding the objects of our desire provided by someone else. We are content to be "free riders" and remain so until the other person's property rights are discovered and enforced. In our home we generally control our surroundings at our own expense. In the case of neighborhoods and cities, our control is less complete, but my taste for clean streets, good housing, and no violent crime might lead me to seek out those sites where these conditions prevail. Believing the quality of my taste to exceed all others, I then seek to maintain or improve the conditions around me to suit me and to remedy the deficiencies in the tastes of others.

If I am a libertarian, persuasion is the acceptable mode of change. The power of my example or my arguments are the instruments of change, and the extent to which they can be seen or heard are real constraints on their effectiveness. The achievement of my tasteful environment may be slow because others may harbor the same high estimation of their own tastes as I do mine. Thus we all must engage in a mutual contest of virtues which may converge or remain disparate. Convergence may be slow; and if I am impatient, I might test my neighbor's virtue by offering to buy him out, or attempt to effect some Coasian bargain which alters his property or behavior to my liking at my expense.[21] Alternatively, I can look elsewhere for more suitable surroundings and offer my property for sale. Whatever happens in this situation, I know I have not impaired my neighbor's

[21]Ronald Coase, "The Problem of Social Cost," *Journal of Law and Economics* 3 (October 1960):1–44.

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choices; indeed, I have expanded them. In so doing, I have maintained or increased the guarantees of liberty in society.

I could take another tack by aggressively asserting the superiority of my tastes and trying to convince at least half of the voters in the city that we share these tastes (or some improved compromise), and that it is in the "public interest" to establish tasteful surroundings not only for ourselves but for others who will thereby be enlightened.[22] The mode of action would be coercion in the form of zoning or other land-use controls and amenity codes. The instrument of coercion would be majority voting, and the constraint would be the effective power of the State to transfer resources from minority voters to middlemen for the creation of the environment desired by the majority voters (or coercers).[23] These middlemen are the public bureaucrats whose livelihood is also a shared expense involving wealth transfer for their salaries. This procedure involves two major harms to society: (1) It reduces the liberty of those whose resources have been confiscated to suit another's taste; and (2) It further encumbers the future choices of all by the amount of resources expended in order to purchase the services of the public employees.

We are all aware that there exists a kind of calculus of consent among urban dwellers, as hedgerows are traded for highways and parks for parking garages. These trade-offs are supposed to work in a democratic society to the benefit of all (the public interest), and the price we pay for the middlemen is said to be justified by the insurance of no free riders and access for all to the jointly funded surroundings. There is little doubt, given the methods of urban public finance and the distribution of public goods, that those who pay would not purchase the identical bundle without being coerced to do so.

Many have labored long to formulate a set of rules and to establish a cadre of monitors to assure the distribution of benefits. The growth of the legal profession is testimony to the strength of this mode of taste fulfillment. A substantial proportion of this profession may be thought of as public employees who have a significant interest in the expansion of the State. This is unfortunate because a regime of strictly regarded property rights would require their services in equal measure.

[22]For a fascinating and insightful case study of the imposition of elite taste on Vancouver, British Columbia, see David Ley, "Liberal Ideology and the Post Industrial City," *Annals of the Association of American Geographers* 70 (June 1980).

[23]Thomas Sowell, *Knowledge and Decisions* (New York: Basic Books, 1980), p. 202. Sowell writes: "Looked at another way, zoning allows some people to impose their values and life-style on others who may not share the values or be able to afford the lifestyle."

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A third approach to the establishment of a tasteful urban environment is to extirpate all who do not share my taste and to confiscate their property directly for my satisfaction. This ultimate coercion obviously reduces liberty and requires a substantial investment of resources to effect the program as well as to protect its initiators from those who violently disagree. Instead of a thriving law profession, weapons manufacturers, undertakers, and florists would prevail. There is, of course, no logical end to this coercion save oblivion. Those who do not believe the awful reality of this approach need only consult the remaining living residents of Hama, Syria, or Kampala, Uganda.

Each among us has tastes we are proud of and would like to have accepted as the model or principle on which our surroundings are predicated. The imposition of my tastes on others, however, will surely cost me in terms of loss of liberty in society and in wealth for the support of bureaucratic middlemen.

The City Today and the Politics of Permanency: A Replaceable Paradigm

The expected life span of an American in 1900 was 47 years while the expected life of a downtown building was 75 to 80 years and a home, 50 to 60 years.[24] As we approach the end of the century, the expected life span for an American is 73 years, for a downtown building 67 years, and a suburban home probably less than before.[25] These gross measures veil a more complex reality but they do indicate a basis for change in perspective on permanency. The individual is born into a built environment which we may assume, on average, to be half worn out. This means that for someone born at the turn of the century about half of the structures were replaced in a lifetime. For the person born in 1980 all of them will be replaced before the end of an average American lifetime.

I do not know whether this indicates an appreciation of people over property or is merely a reflection of the ineluctable process of the articulation of land values by the market. What does seem clear is that cities, their physical structures as well as their populations, are more mobile than ever before. Flesh and stone alike appear to be more responsive to the choices offered by the market, itself stimulated by the profoundly disruptive forces of changes in communications and transportation.

[24]Office of Tax Analysis, U.S. Department of the Treasury, *1978 Compendium of Tax Research* (Washington: Government Printing Office, 1978), p. 96; and Larry S. Bourne, *The Geography of Housing* (New York: John Wiley and Sons, 1981), p. 29.
[25]Ibid.

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This mobility is becoming more characteristic of firm behavior. The economics of spatial relocation to capture the moving target of optimal return on investment requires a constant recalculation of land values, transport costs, communications improvement, and the locational behavior of suppliers, purchasers, and competitors. This is particularly true for cities as they change from an industrial to a service-oriented economic base. Fast-food chain outlets, supermarkets, beauty salons, and countless other service firms are locationally unstable in the scramble for profit. The result of this unsettling behavior is a net benefit to the consumer as more efficient locations are found. This is the physical response to demand.

Mobility in firm behavior is not confined to service activities. Industries shift locations, albeit more slowly and over greater distance.[26] The decisions behind these moves are not whimsical. Indeed, the improvement in the ability of the firm to re-establish at a new site is a benefit to producer and consumer alike. Against this backdrop of market-responsive movement is played a politics of permanency which would maintain routine patterns. The politics of permanency argues that the public interest requires chaining firms and people to places to reduce uncertainty in zones established for their functions. The question is begged "For whom shall uncertainty be reduced?," and one suspects it is chiefly for politicians who desire to encumber this mobility in order to preserve established constituencies within defined, jurisdictional boundaries for tribute. It would also diminish the costs of informing newly arriving, potentially nonconforming immigrants of their expected fealty.[27] Alternatively, pleas are uttered to incorporate in one political unit individuals and corporations that have moved beyond the boundaries; hence, we have attempts to establish metropolitan government.

But does it all work in this ignoble way? These broad perspectives cry out for confirming examples, of which there are many. We shall consider four: historic preservation, enterprise zones, hostage industries, and residency requirements. These four situations represent the propensity to insulate the city from change. Land use and zoning controls, rent controls, various federal government transfer programs,

[26]Michael Hora suggests that given rapid technological changes, there may be "throw away factories" in the future. He says that the plant or the product produced could become obsolete within five years of construction and would be abandoned. See *Plant Engineering* 36 (February 4, 1982):42–48.

[27]The importance to politics of limiting movement is recognized in George S. Tolley, Philip E. Graves and John L. Gardner, *Urban Growth Policy in a Market Economy* (New York: Academic Press, 1979), p. 3.

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direct federal investments, investment guarantees, and state and local government actions often contribute to the maintenance of old patterns and relationships.

Advocates of change, like "developers," are cast as unsympathetic and avaricious sacrificers of community values for their own profit. Increasingly, the power of the State, through its courts, is used to slow the pace of change or to insure the unpaid-for incorporation of other's values in any action. For example, in San Francisco the Office of the Mayor has ruled that for a developer to win approval for an office development the firm must contribute to construction of low- and middle-income housing in the city.[28] One result of this policy has been for successful firms that are considering expansion to move to the suburbs beyond municipal control.

There is, of course, no reason why those who wish to preserve the city as it is or to recreate it in a previous image cannot join in their enterprise to outbid the developers. They have done so at times; but time and again they have resorted to the politics of permanency and the coercion of the State to resist change because they cannot summon enough uncoerced resources to meet their ambitions. They argue that the "public interest" will be hurt if this change or that alteration is allowed to take place. They argue that "something" will be lost irrevocably or the welfare of groups they favor will be injured. The reason usually given for their inability to generate the resources to pursue their whims is that some investments are too large for the private sector, which is another way of saying that not enough willing individuals share their vision of good taste. Whether their vision is in good taste or not is always disputable. The fact that a private entrepreneur, rather than public officials, brought the London Bridge to the Arizona desert, for example, casts doubt on the financial integrity of these arguments. And the multitude of private preservation and restoration efforts, not to mention enormous private developments, refute them entirely. Nevertheless, in a society increasingly accustomed to the separation of fiscal responsibility from human action, the urge to spend someone else's money is overwhelming. Consider the following examples.

Historic Preservation

With few exceptions, historic or landmark preservation illustrates the powerful force of cultural elites who impose their tastes on the

[28]Muriel Dobbin, "San Francisco's Housing Policy Called Blackmail," *Dallas Times Herald*, March 28, 1981.

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landscape at the expense of the general public. City after city has been confronted by small groups of architectural aesthetes who are as highly organized as they are both righteous and wealthy. In city after city these groups have succeeded in stalling, or permanently freezing, the pace of physical and functional change. In the name of "heritage" or "culture" or "a livable city," and invariably "in the public interest," preservationists seek to legislate "charm" for others. Often substantial private funding is contributed for matching with public resources, but rare indeed does private funding alone provide for renovation of entire historic districts or even major buildings. Support from such generous preservationists is also directed at private institutions such as the Preservation Society and the National Center for Preservation Law, which helped to organize the preservationist agenda and to lobby for their interests. Those in the preservationist vanguard are often individuals of substance whose opinions city politicians and bureaucrats find difficult to ignore.

Even at the national level the influence of these elites can be felt as restoration of funding is sought from Congress for the National Trust for Historic Preservation. After 15 years of federal subsidy, which reached a peak of $60 million in 1979, the Reagan administration has proposed to end all federal support. Among the Trust's programs that will feel the impact are: the Inner-City Ventures Fund set up to encourage new revitalization approaches for low-income neighborhoods; the National Mainstreet Center, a program to help small towns restore their main streets; and the Endangered Properties Fund, a source of emergency money to be used to ward off economic development activities which would threaten "a property of national significance."[29] Whose tastes were served by these programs and at whose expense?

Some of the impact of the drop in direct federal aid has been assuaged prospectively through congressional action. Beginning in 1982 individuals may receive a 25 percent tax credit for rehabilitation of certified "historic structures" in any qualified "historic district."[30] Owners of more than a thousand buildings in an expensive section of Manhattan are likely to qualify for these write-offs.[31] These new rules follow the already generous write-offs available for rapid amortization.

[29]Michael L. Anslie, "Historic Preservation Zero Funding," *New York Times*, March 27, 1981.

[30]Maurice Carroll, "Historic Status May Yield Tax Break," *New York Times*, September 28, 1981.

[31]Ibid.

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In New York City the Landmarks Preservation Commission regulates more than 15,000 buildings, which include about two percent of the city's housing stock.[32] It has conducted an Urban Cultural Resources Survey, which performed the uncommonly insensitive public service of declaring certain buildings to be "culturally worthy of protection"! The survey apparently had the defect of being carried out *before* Art Deco came into vogue, so it must be reworked.[33]

Miami Beach was not so fortunate. Art Deco enthusiasts of the Miami Design Preservation League, using the authority of the National Register of Historic Places, succeeded in identifying more than 800 buildings in a 125-block district as genuine examples of Art Deco in need of protection.[34] The conflict that has developed between selected aesthetes and property owners who are seeking to redevelop the area is narrowing to a compromise in which an Art Deco district will be designated to include only 250 of the original 800 buildings.[35] This compromise results not only in the denial of the full exercise of property rights of some individuals to satisfy the whimsical tastes of others, but it is achieved only by the use of federal funds to buy off the intransigent property owner. The process of regeneration of activities on the site is forestalled or forgone.

Not even Dallas, a city widely regarded as tastelessly ahistoric in its development binge, has been immune to the designs of the private Historic Preservation League, expressed through the city's Landmark Committee. Recently an $80 million, 54-story office building in downtown Dallas was denied a permit because it would require tearing down two old buildings on the site.[36]

It is not that historic preservation is bad, or even Art Deco for that matter (as a child I greatly admired Spokane's Benewah milk store which was shaped like a milk bottle), but the fact remains that these tastes are too particular to warrant competing for valuable urban space. What might be a charming remnant of the past when protected by private individuals who cherish the structure becomes a hideous monument to the disregard of human rights when property owners are required to adhere to the standards of taste set by small, insen-

[32]A. O. Sulzberger, "Landmarks Unit Adopts Bolder Tack," *New York Times*, September 20, 1981.

[33]Ibid.

[34]Jo Thomas, "Miami Beach Conflicts Pit Developers Against Lovers of Art Deco," *New York Times*, March 26, 1982.

[35]Ibid.

[36]Terry Maxon, "Landmark Panel Stymies Skyscraper," *Dallas Times Herald*, April 14, 1982.

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sitive groups willing to invoke the coercive power of the State to enforce their whims.

Enterprise Zones

Consider President Reagan's proposal for enterprise zones. Imported from Britain, presaged in the free-trade-zone legislation of previous administrations, and bandied about for over a year, enterprise zones are apparently destined to be the centerpiece of the administration's urban policy. Essentially the proposal would suspend certain troublesome federal, state, and local regulations in bounded spaces for the purpose of encouraging new firms to rise from the ashes of burnt-out inner cities. There is some indication that rural areas and Indian reservations may qualify too, but it is generally viewed as chiefly an urban program targeted at the most depressed parts of the most distressed cities. Details of the proposal and debate on the efficacy of specific parts are the purview of other contributors to this volume. I will comment on a broader level.[37]

At face value the Enterprise Zone Proposal is little more than the other side of the Carter administration's targeting of federal funds to "pockets of poverty."[38] Instead of federal largesse dumped into the social equivalent of "black holes," we find a federal program directed at the same points but with a severely reduced payload. Apparently the only major costs of the new program will come from identifying sites (25 a year for each of the next three years), monitoring, and forgoing taxes as the economy of the zones develop (essentially a tax holiday for a quarter of a century). This is such a dramatically different approach to urban problems and the "urban crisis," and so intuitively appealing at the micro level that it is easy to ignore its potential for catastrophe.

It is hard to imagine what catastrophe could issue from reduced government spending. In the broader perspective, however, enterprise zones appear to be simply another form of place-specific government intervention. They dislocate individual choices and misdirect the location pattern of activities to areas which otherwise could not sustain them. Thus, an enthusiasm for maintaining a specific location pattern is as pervasive under Republican leadership as it

[37]For an interesting discussion from several perspectives, see the *Manhattan Report* 1 (April 1981), which is a special issue on urban enterprise zones.

[38]U.S. Department of Housing and Urban Development, Office of Community Planning and Development, *Pockets of Poverty: Examination of Needs and Options*, HUD-CPD-449 (Washington: Government Printing Office, 1979).

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was under Democratic leadership. It is no surprise that bipartisan backing is forthcoming.

Unfortunately, the enterprise-zone initiative is sure to be viewed as a major domestic "disinterventionist" action on par with the proposed leasing or outright sale of public lands. The prospects for positive results from urban enterprise zones, however, do not appear as bright as those attached to altered property rights in public lands. If the enterprise zone policy fails, the wide perception of it as a disinterventionist effort could result in a major setback for those who seek to reduce the role of government.

To cavil about enterprise zones does not help our search for urban opportunities. One can only urge that as the legislation is debated in Congress, some means may be found to build in a "spatial escalator clause" which automatically, and exponentially, allows the territorial expansion and eventual merging of enterprise zones. An example of an escalator clause might be to create 15 enterprise zones the first year, 30 the second, and 60 the third, continuing in geometric progression, instead of the currently proposed pace of 25 a year. Or individual urban zones might be allowed to expand their periphery one block in all directions each year if this is acceptable to those in contiguous blocks.

Along non-spatial lines, the community living in the zone might be given the option of suspending the most noxious regulation they have experienced since the last general election, and in this way, slowly dissolve the regulatory regime to the level that suits them. Such an escalator clause could speed the approach of a free society. The faster the zones are allowed to spread the less the damage to the spatial fabric of the economy. For this reason, it is particularly important to identify *non-urban* territories as enterprise zone candidates in the first selection and to develop appropriate spatial strategies to promote their eventual linkage to each other and to urban places.

Free To Close: The Industrial Hostage Issue

Another manifestation of the urge to fix people and property in places is the "free to close" issue facing firms in fading factory towns.[39] Debate has arisen over the responsibility of companies to compensate communities when they choose to relocate. Indeed, both Maine and Wisconsin have enacted laws – albeit ineffective ones – to require

[39]Richard B. McKenzie, ed., *Plant Closings: Public or Private Choices?* (Washington, D.C.: Cato Institute, 1982).

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compensation by departing firms.[40] Proposals for extended notices of plans to close, severance pay, free job retraining, and resettlement financing are part of the regular refrain of those who would use coercive powers to shift the costs from themselves to someone else. Who causes the cost? It is not the firm, which is merely responding to market conditions. Instead, the community members, when they decided to locate there, should have considered the possibility of the firm closing down or moving.

These attempts to recoup for the personal lack of provenance are taken a step further when the move itself is blocked. In New Haven, Connecticut, the city has tried to block a Corps of Engineers landfill operation in a suburban town, which would create a site for a major regional shopping mall. The city wants to retain retail shoppers in the downtown and deter investment by center city retailers in suburban shopping malls. Despite years of effort by the federal and state government, Ford Foundation funding, and the intellectual contribution of Yale University, New Haven apparently is not as viable a site as city leaders would like it to be. Civic spirit becomes tarnished when city leaders resort to coercion to achieve their ends.

Discussion of the utility of taking "industrial hostages" is sure to grow in cities facing the loss of firms, despite the economic absurdity of the action. For a city council or a state legislature to consider this issue seriously is tantamount to economic suicide since local firms considering a relocation will accelerate their plans, and new firms won't take the risk of future confiscatory action.

Public Employee Residency Requirements

A different, and potentially more pernicious, form of central authoritarian resolution of the central city/suburban tension is instituting residency requirements for public employees.[41] This is an outright attempt to fix individuals, not just activities, to specific territories. Such action is not possible with private individuals, whose jobs are not in jeopardy, but procurement rules could possibly be adopted by a city government that would favor firms located in the city, or that would require the hiring of otherwise unemployable city residents.

In the United States, residency requirements for public employees were upheld in *McCarthy* v. *Philadelphia Civil Service Commission*

[40]Samuel G. Freedman, "Connecticut Considers a Plan to Make 'Runaway' Industries Do More for Their Workers Than Say Goodbye," *New York Times*, March 14, 1982.
[41]Ronald Briggs and John Sommer, "The Residency Requirement as Public Policy," paper presented at the Western Social Science Association meetings in Albuquerque, N.M., April 1980.

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in 1976 after having faced many tests in lower courts.[42] The arguments cited in their favor were clearly stated in *Ector* v. *City of Torrance* (1974).

> In its decision, the state supreme court adopted every municipal interest argument that the city offered. The residency requirement bore a rational relationship to many legitimate state interests: reduction of residents' unemployment, promotion of ethnic balance in the city, availability of trained manpower in emergencies, reduction in employee tardiness and absenteeism, increased quality of worker performance, and the city's economic benefit from local expenditure of employees' salaries.[43]

Add to this the argument that public employees also are counted for the city when federal grant formulas are applied.

The obvious counter to these arguments is that individuals are paid for their work, not their territorial allegiance. Unfortunately this has had little effect. In the Briggs and Sommer study cited above, 50 of the largest cities in the United States were examined. More than two-thirds had residency requirements and of those more than half introduced their requirements during the 1970s.[44] The incidence of requirements (keeping in mind the small survey population) was less than 50 percent in southern and western cities and nearly 90 percent in northern and eastern cities. The significance of this difference remains to be tested, but it is hard to avoid the conclusion that there exists a certain desperation to hold on to people when a city is deteriorating.

Why Pin Down People and Property?

Aversion to change, uncertainty, and risk may inspire in one the urge to "have things in their place," even to the point of forestalling change at considerable expense. Everyone has a threshold for tolerance of risk or uncertainty, and for those whose threshold is especially low it may be difficult to marshall sufficient personal resources to achieve a satisfactorily reduced level. For those individuals who remain dissatisfied, control over events is sought through the use of public resources.

In the examples of public employee residency requirements, and in the various approaches to central city renewal, we are witness to

[42]Connie M. Hager, "Residency Requirements for City Employees: Important Incentives in Today's Urban Crisis," *Urban Law Annual* 18 (1980). This is an excellent review of case law on this subject.

[43]Ibid, p. 210.

[44]Briggs and Sommer, pp. 6–9.

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the plunder of common pool resources (tax dollars) for the purpose of fixing individuals, property, and functions in locations or regions. Why? Is it to minimize the inconvenience to some who wish to remain at a site but who do not want to bear the cost of that decision, or to avoid the financial losses to individuals who did not have the foresight to move sooner? Despite protests that it is in the public interest to cling to the city as it has been, it is precisely this intolerance of change that is draining the vitality from our urban centers. This propensity for pattern maintenance reached Promethean proportions with the National Land Use Policy and Planning Act, which fortunately was narrowly defeated in 1974.[45] On an urban scale, land use plans, zoning laws, rent controls, and other dislocative nonmarket forces forestall the emergence of imaginative city forms and functions because they constrain spontaneous combinations. It is directly from these spontaneous combinations that economic vitality is derived. Some combinations will fail while others will succeed. Some might dub this "urban Darwinism," but I would challenge the pejorative use of this term. The speedy exit of the ill-conceived firm or activity is far preferred to maintenance of the moribund simply because it had the temerity to exist in the first place. August Lösch, a prescient political economist whose work is only lately being recognized for its brilliance, commented forcefully on this situation:

> Enforced perpetuation of an originally profitable combination of interests, and the perfect preservation of old conditions in particular, creates a museum, which, like all such institutions, requires large sums for its maintenance. As soon as the breaking up of old combinations is economically justified, every attempt to obstruct it means a sacrifice. A sacrifice, however, that may be vindicated now and then by the fact that it helps to preserve the political and cultural existence of an economic landscape for a while even though it has passed its economic prime. Those who have to bear the burden in this case are the inhabitants, who, prevented from migrating, are forced to put up with a lower standard of living. In the long run they are also politically endangered thereby. If it is a case merely of a depressed area within a country, the prosperous areas generally bear the cost. This is not always a wise policy, even when the importance of extra-economic causes is freely admitted. It would often be much better to facilitate the breaking up of an old combination of land, people, and economic activities and seek systemat-

[45]Richard A. Walker and Michael K. Heiman, "Quiet Revolution for Whom?," *Annals of the Association of American Geographers* 71 (March 1981):70. See footnote 20 on this page for an extensive list of citations on this subject.

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> ically for a new and vital one; that is, to promote adaptation rather than to obstruct it.[46]

It is interesting to note the enthusiasm for Lösch's work in Hayek's remarks comparing market allocation and central planning:

> Though we again have to deal here with a problem wherein the price mechanism operates only imperfectly and does not take into account many things we would wish to see taken into account, it is more than doubtful whether a central planner could guide developments as successfully as the market does. It is remarkable how much the market does accomplish in this respect by making individuals take into account those facts which they do not know directly but which are merely reflected in the prices. The best-known critical examination of these problems has indeed led A. Lösch to conclude that "the most important result of this book is probably the demonstration of the surprising extent to which the free forces operate favorably."[47]

Obviously, the rationale of the politics of permanency is at odds with these views and of the whole notion of post-interventionism. In city after city government attempts to protect and preserve structures the market has declared outmoded. These frantic manifestations of control, supported by pleas for greater intervention, are the most potent arguments for replacing this paradigm of urban existence with one in which government is minimized and individual choice is fostered. In the following section the shape and function of "the post-interventionist city" is sketched and estimates are made of how it would differ from current configurations.

The Post-Interventionist City

The post-interventionist city is shaped by the market under conditions of minimal government action from federal and state levels. Neighborhood organizations assume a much more prominent role as a cooperative bargaining unit for privately provided services. Voluntary collective action expands dramatically. Creative forms of urban services emerge from the enhanced diversity of urban activity. Existing trends in the privatization of public services are enhanced. But before invoking the spirit of Adam Smith to assist the transformation to this new, more liberal city, we should be as clear as possible about what would be wrought. We know, as did Algernon Sidney, that "our

[46]August Lösch, *The Economics of Location*, translated from the second revised edition by William H. Woglom (New York: John Wiley & Sons, 1967), pp. 326–327.
[47]Hayek, pp. 356–357.

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inquiry is not after that which is perfect, well knowing that no such thing is found among men; but we seek that human Constitution which is attended with the least, or the most pardonable inconveniences."[48]

From this perspective it is fundamental that we identify the forces shaping our urban environment so that estimates of the post-interventionist city's functional and spatial organization may be made.

Technology and Values: The Bases for Urban Change

Technology and values interact to shape the city and to breathe life into its functions. A change in one affects the other, and both, in turn, alter our perceptions of the desirable and the possible. For example, cities have been deeply affected over the centuries by changes in the technology of moving men, material and messages, the net result of which has been to reduce the time and cost of movement. This extends the field of human interaction and permits greater choice.[49] Urbanites have chosen to exercise their increased spatial choice by relocating to the suburbs and beyond. Indeed, the 1980 census revealed that for the first time the population of suburbanites (45 percent of all Americans) exceeded that of the central city.[50] Changes in the institution of the family, for example, have spawned the growing number of single-parent households. This, combined with a general aging of the U.S. population and its attendant creation of one-person households through the death of a spouse, has had an impact on the demand for smaller living spaces.[51]

These kinds of changes in technology and values have been multiplied many times, and each change has its impact on the shape and function of the city. In general, any technological alteration of the movement or circulation capacity of the city promotes other functional and structural changes. Major innovations such as the streetcar, the automobile, or telecommunications profoundly affect urban functions and uproot existing structures. These forces add up to a technological genie that promoters of the politics of permanency will have to put back in the bottle if they are to achieve their goals.

[48]Algernon Sydney, quoted on the cover page of *The Constitution of Liberty*.

[49]Ronald Abler, et al, *Human Geography in a Shrinking World* (Belmont, Calif.: Duxbury Press, 1975). See chapter one for the general argument.

[50]Marsha Taylor, "45% of the U.S. now Resides in Suburbs," *Dallas Times Herald*, 1982.

[51]Robert Hanley, "New York Suburbs' Planners See Switch to Small Houses," *New York Times*. November 28, 1981; see also, William Geist, "Suburban Tempest: Neighbors Riled by In-House Apartments," *New York Times*, December 8, 1981.

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Mapping the outcomes of these technological changes as they affect the ability of firms and individuals to bid for sites is an exercise in futuristics performed elsewhere, though not with specific reference to the post-interventionist city.[52] Speculating about the urban impact of the value change implicit in the reduction of intervention is difficult in both theory and practice. The theoretical issue is obvious: Even though the approximation of a rent gradient following neoclassical economic postulates is assured, it is virtually impossible to predict what functions will be the high bidders for urban space given the spontaneous and synergetic quality of a liberated market.[53] Practically, it is a prodigious task to know enough about different institutions (e.g., shelter, circulation, education, utilities, open space, protection, etc.) to estimate their interactions under unstable conditions. Even a crude outline must begin with a fundamental understanding of land rents.

Land Rents and Uses

Lösch once remarked that "our existence in time is determined for us, but we are largely free to select our location . . . finding the right location is essential to successful life, but it is essential also to a successful enterprise . . . a suitable location must be a location for the right events."[54] One might add that the utility of sites for events in the physical space of cities will be unstable and subject to constantly changing, value-laden appraisal in a freely competitive market. The "right" event is one that maximizes the rent on the site. The literature of geography, urban economics, and regional science is replete with elaboration of this idea and it need not be repeated in detail. However, a simple example may be helpful to the reader.[55]

In theory, a rent gradient is formed with a peak at the center of the city and a slope toward the countryside. (Figure 1(a)). This simple aggregate slope exists because of the high value of being at the point of minimum aggregate travel of an assumed evenly distributed population across a surface of equal accessibility. Obviously, there are

[52]Sommer, "Fat City and Hedonopolis: The American Urban Future?" in Abler, et al, pp. 132–148.

[53]For the modern standard treatment of fundamental urban economics, see William Alonso, *Location and Land Use: Toward a General Theory of Land Rent* (Cambridge: Harvard University Press, 1964).

[54]Lösch, p. 3.

[55]In addition to works by Alonso and Lösch already cited, see Robert L. Bish and Hugh O. Nourse, *Urban Economics and Policy Analysis* (New York: McGraw-Hill, 1975).

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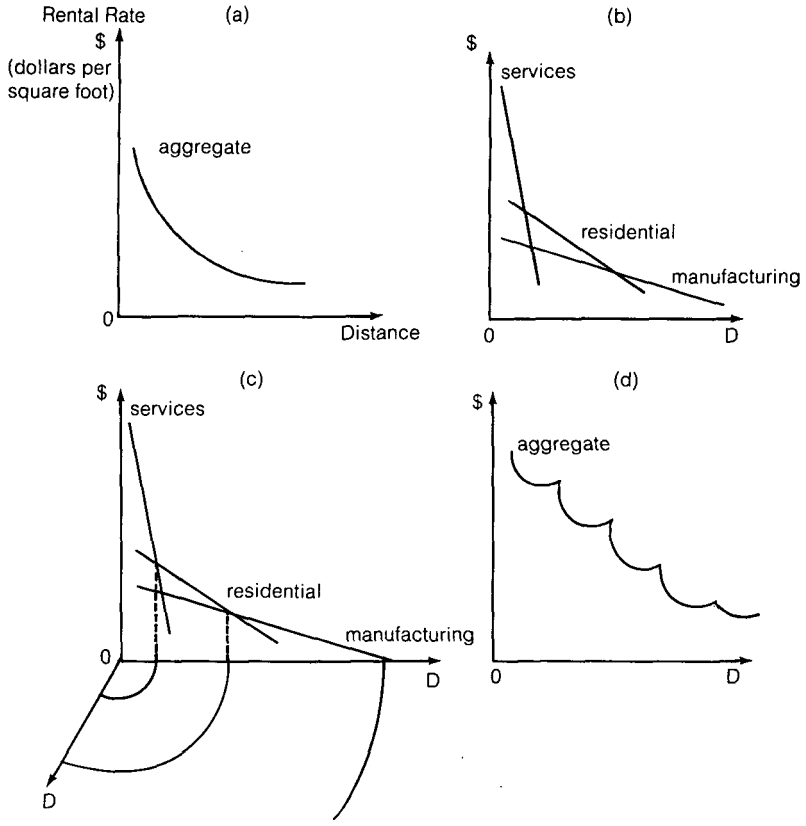
FIGURE 1
LAND RENT MODELS



slopes for each of the disaggregated functions, and no city has equal accessibility from every sector; hence we observe a more complex graph in Figure 1(b), which when rotated on its vertical axis like a drafting compass, and then viewed from above, yields a simple description of market-determined land use zones as in Figure 1(c). Figure 1(d) shows the simple aggregate model of Figure 1(a) modified by belt-like transportation which, as a result of improved accessibility to other points in urban space, raises smaller rent peaks away from the center. In the mind's eye Figure 1(d) can also be disaggregated, rotated, and viewed from above to begin to gain an appreciation of the complexity of the surface of rents. If one then imagines this surface to be incessantly oscillating due to human choices brought

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about by changes in technology and values, the dynamics of spatial competition and unstable equilibria (firms on sites) begins to emerge.[56]

It should also begin to be apparent that spatial economic choice is severely affected if government removes a slice of urban space from the whole, especially if it is removed from the center for the preservation of a historic district.

This dislocation of functions is dwarfed, however, by the effects of government taxation, which reduces the power of some firms to compete for accessible sites while enhancing the power of others. This promotes artificially "suitable locations" and impairs the spatial economy.

What, then, are some of the contemporary urban outcomes of the constrained market, and what might take shape in a post-interventionist city?

Service Centers: The Emergent Raison d'Etre

The city has increased its role as a service center during this century, to the point that the majority of jobs in cities are in the service sector. Manufacturing jobs have been pushed away from the center city because they do not require "centrality" to the same degree as do services where human contacts are of paramount importance.[57] What they do require are spatially extensive sites at the periphery where land is cheaper. In the wake of their departures, manufacturers have left behind them physical structures that are not readily adaptable to the service industries. This has impaired the flexibility of cities, even though these structures can be altered or removed.

The private service sector is especially prone to constant spatial rearticulation as unwieldy firms, such as department stores, are replaced by other firms requiring less space in which human interactions can occur. Increasing density of firms on these central sites results in intensified use. The impact of telecommunications, with all of its potential for dispersing clerical and other service functions, is only just beginning to be felt. Many other service activities will eventually abandon central locations to be replaced by others with irreducible requirements for human contact. Major financial and legal transactions, exchanges requiring confidentiality not to be risked on

[56]For an excellent treatment of spatial competition, see M. L. Greenhut, *A Theory of the Firm in Economic Space*, 2nd printing (Austin, Texas: Lone Star Publishing Co., 1974).

[57]See Walter Christaller, *Central Places in Southern Germany*, translated from German by C. W. Baskin (Englewood Cliffs, N.J.: Prentice Hall, 1966).

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teleconferences, leisure activities, and judicial services (a public good) would be prominent at these highly accessible sites.

Adding to this intensity is the general increase in rents attributable to the appropriation of centrally located space for public purposes or occupied through special arrangements by the State by educational and religious institutions. President Carter once remarked that during his administration nearly four-fifths of all new federal facilities were placed in the central city.[58] These public or publicly subsidized activities in urban space are a specialized part of the service sector but whether the activities, if privately proffered, could pay the rents on these center sites is unclear. In the post-interventionist city one would expect grossly unprofitable uses of urban space, like jails, or post offices, to vanish altogether or to be displaced to distant locations.

One would also expect the firms or activities most likely to capture central locations are those with the highest return per square foot, and with the fewest externalities to internalize or litigate. In New York or Dallas the premium rents are paid by firms in the service sector.[59] In the cores of cities supposed to be suffering economic trauma service employment is increasing.[60]

These services and the demand for access to them will continue to affect remaining manufacturing firms, eventually pushing all but a few down the rent gradient. Services will also affect the residential population generally by driving those least able to pay in either of two directions: toward extreme densities in high-rise structures at central locations, or away from the city in pursuit of manufacturing jobs not competitive at the center. "Gentrification" is also a manifestation of this dynamic as the suburban wealthy purchase, and return to inner-city, housing stock to take advantage of centrally located activities.

The rule in the post-interventionist city is that individual access depends on ability to pay, leaving the individual free to make the most "tasteful" adjustments given the constraint of personal wealth. Some adjustments might include diminished use (with attendant conservation effects), choice of lower quality items, migration to less expensive sites, or reliance on charitable institutions in extreme

[58]John Herbers, "U.S. Poverty is Found Declining Everywhere But in Big Inner Cities," *New York Times*, September 29, 1980.

[59]Diane Henry, "A Mecca for Foreign Investors," *New York Times*, February 3, 1982.

[60]Dudley Clendinen, "Boston Booms Amid Municipal Decay," *New York Times*, September 27, 1981; Iver Petersen, "Boom and Bust Overlap in Cleveland," *New York Times*, February 15, 1982.

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circumstances. These possibilities would apply to what are often thought of as public services as well as to the private goods and services mentioned above. Because public services such as fire and police protection, transit, education, utilities, and open space have been supplied in large measure by the public sector for a long time, an imaginative transition to reduced intervention will be required. In each category there exist examples of privately supplied activity, whether it be as mundane as home smoke detectors and fire extinguishers, neighborhood security patrols, van pooling, etc., or as highly organized as a distinguished private educational institution or a utility company. The central authoritarian may view these as supplemental to the State services whereas the libertarian might view them as elemental and in need of expansion when publicly supported institutions shrink.

Does this mean anarchy in our cities? Of course not. There is a logic to collective action at the appropriate level and there is much about which we may choose to be rationally ignorant, choosing to hire someone to act on our behalf rather than investing in becoming knowledgeable ourselves. Each of us will vary as to that over which we would relinquish sovereignty but a hierarchy of levels of collective authority, unanimously approved, can be achieved if each local authority does not have to fit its actions within the dictates of remote central authority. It follows then that instead of arguing for general metropolitan-wide government we should seek the institutional flexibility to adhere to ad hoc territorial units for our specific collective goals. City government would relinquish authority to neighborhoods and neighborhoods to even smaller associations. Collective action may involve as few or as many individuals as is reasonable for the goal to be achieved, but no one must be forced to participate. "Publicly" generated goods from these organizations would require the same protection of the laws as private goods. Access by those outside the association would be based on user fees.

Does this mean that no confiscation may occur for redistributive purposes? Yes. But it does not mean that redistribution will fail to occur; it merely places the act of redistribution within an ethical framework of "each according to his conscience." This could become one of the most innovative aspects of American life as those imbued with great personal drive to improve the material condition of the indigent could work to organize the charitable sector of the economy. If a group was concerned about shelter for the poor, the emphasis would be on an appeal to the populace for charitable gifts, and their success would depend upon the effectiveness of their pleas. This is preferable to a group like the Coalition for the Homeless bringing a

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class action suit against the City of New York, as it did in 1981 to force the provision of a certain standard of shelter.[61]

The charitable character of Americans is well known. In 1981 gifts to charity increased 12 percent over the previous year.[62] However, much of the charitable sector has relied on existing tax loopholes to induce private gifts. Thus, any reduction in the coercive power of government will put more pressure on private charitable organizations to promote their programs and to face the reality of reduced federal and state welfare programs. In such an environment groups like United Way or Catholic Relief Services or churches would provide charity to those who truly needed it, and it would be done incrementally, according to the individual case, rather than by entitlement.

The Central Authoritarian Critique

What is the foundation of the difference between the libertarian's conception of the city and that of the central authoritarian? I see four main differences. The first concerns human nature. The central authoritarian views humans as potential miscreants whose urge to satisfy self must be controlled a priori to prevent anticipated injury to others. The libertarian makes no such supposition: Humans are expected to pursue their self-interest, but within a framework of non-injurious action toward others or their property. Injury may be determined only after the fact; therefore a clear specification of human and property rights is important to the post-interventionist city. Both of these views at their extremes produce untenable situations, for we can neither anticipate every risk and prevent people from taking it, nor can we condone every action simply because no one was injured.

A second difference concerns perceptions of resources. The fiction of fixed resource limits is a crucial ingredient in central authoritarian arguments because it permits the proposition of a Thurowian "zero-sum society" in which any gain by an individual is at someone else's expense.[63] By fostering the zero-sum notion, a "crisis" is manufactured and government control, through the political process, is then required.[64] This has the political advantage of creating public sector

[61]Judith Cummings, "Increase in Homeless People Tests U.S. Cities' Will to Cope," *New York Times*, May 3, 1982.

[62]Kathleen Teltsch, "Despite Recession, Donations to Charity Rise 12%," *New York Times*, April 9, 1982.

[63]Lester Thurow, *The Zero Sum Society: Distribution and the Possibilities for Economic Change* (New York: Basic Books, 1980).

[64]Harvey Molotch, "The City as a Growth Machine: Toward a Political Economy of Place," *American Journal of Sociology*, vol. 82, no. 2 (1976):312.

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jobs and the disadvantage of leaching the productive sector of the economy. I have dealt with this issue elsewhere and argued that the interventionist "solution" is really a negative sum game which diminishes the very real possibility of positive sum results in human action.[65]

A third difference has been cited previously. The concept of order and control differentiates the central authoritarian and the libertarian. Central authoritarian writers see urban chaos where libertarians see opportunity. Walker and Heiman characterize this discordant view in the following terms:

> The rules of the game in property development continue to be uncertain because the economy is deeply unsettled and political differences are unresolved. Given the state of "chaos" that faces property capitalists, the need remains for "reform" that allows development to proceed as in the past.[66]

Allen Scott, an exceedingly thoughtful central authoritarian, has written:

> Capitalist cities are only prevented from falling into massive disarray by the incessant intervention of the State. Even so, given the nature of the capitalist State, this intervention is always extenuated, and there have been recurrent moments, not only in earlier Dickensian periods of capitalist urbanization, but also in the very recent past when it has seemed as if the city and city life were doomed to be swallowed up in their own self-engendered chaos and irrationality.[67]

Scott's main conclusion is that insufficient social justice is derived from a city built on a market criterion. David Harvey, another potent critic of the market-driven city, comments:

> The prospects for equity or for a just redistribution of income in an urban system through a naturally arising political process (particularly one based on a philosophy of individual self-interest) are bleak indeed. The extent to which a social system has recognized this fact and adjusted itself to counteract this natural tendency is, I believe, correlated with the degree to which that social system has succeeded in avoiding the structural problems and deepening social tensions consequent upon the process of massive urbanization.[68]

[65]Sommer, "Resource Depletion in the Orwellian Decade," *Proceedings of the 20th Annual Institute on Petroleum Exploration and Economics* (New York: Mathew Bender and Co., 1980).

[66]Walker and Heiman, p. 77.

[67]Allen J. Scott, *The Urban Land Nexus and the State* (London: Pion, Ltd., 1980), p. 169.

[68]David Harvey, *Social Justice and the City* (Baltimore: Johns Hopkins University Press, 1973), p. 79.

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Their remarks are, of course, wholly disputable matters of taste, but they are not trivial given that the course of contemporary urban life is tilted in their direction.

Scott's and Harvey's remarks do serve both to illustrate the issue of order and to reintroduce the fourth difference – the willingness of the central authoritarian to employ coercion to enforce taste, be it taste for "social justice," historic buildings, or urban beautification.

These differences are profound in their impact on the organization of society at large or on the city in particular. If we adopt a view of humans as fundamentally mischievous creatures, plundering a finite supply of resources, one can see why an enthusiasm to trade liberty for social control could be pervasive. Comprehending that condition permits us to understand that when we relinquish liberty, those who control also establish and enforce our standards of taste.

In contrast, if individuals are seen to be merely self-interested seekers of wealth, limited in resources only by their imagination, it becomes important to minimize controls that divert attention from positive sum combinations.

The potentially most damaging central authoritarian critique of the post-interventionist city relates to social product and welfare. The market solution I have suggested here places specific responsibility for welfare on freely taken, individual charitable acts. I have admitted my doubt that the level would reach current expenditure of government-coerced taxation for transfer purposes. On the other hand, not as much would be needed to support a welfare bureaucracy, leaving more to be distributed to the indigent. The revived market would also sweep up many who wish to work but who currently can not do so because of government regulations such as the minimum wage.

Efforts to achieve the post-interventionist city will produce a negative response from those benefiting from government programs, and threatened politicians and bureaucrats will align with special interests to resist change. Their political effort will be intense.

Social product, such as it may exist in libertarian terms, would be improved by the enriching spontaneous combinations of the market. Lösch adds a caution, however, which may be as instructive as anything I can write:

> The advantages of a free economy operating under ideal conditions lie in self-determination of the individual and self-regulation of the whole, or briefly, in freedom and equilibrium. But say its opponents contemptuously, this need not be reasonable; it may be "any kind of equilibrium." There is much truth in what they say: it remains to be proved whether a free economy also provides, as a third advantage, the greatest possible social product. Its critics might

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> reflect, however, that economic freedom is a good in itself, and as such constitutes a part of the national income.[69]

The Vanishing Urban Crisis

The disappearance of the "urban crisis" is the result of an alteration of our conception of what a city is and what it is not. The city is a place of extraordinary instability, rich with opportunity, full of risk, and productive of that which humans value most. Some may decry those values and seek to impede their expression or to replace them with others more to their taste. So be it; in the post-interventionist city there is a free market in taste and a requirement only not to impose it on another. By contrast, in the contemporary city constraints abound, and coercion is rampant. The politically driven urge to coerce underlies the promotion of a false view of the city as an organic entity requiring external nurture and the maintenance of fixed patterns of people and property. I cannot overemphasize the importance of disposing of this potent lie which has misguided urban policy and has led to the misallocation of resources. Cities are not singular entities, they are collections of individuals cooperating in a market system to further their well being. The incubus of intervention must be laid to rest.

Cities are vital places (not organisms) because they are loci of information. Their centers are balance points of potential interaction, and that potential is thwarted by a tangle of government-engendered, disequilibrating rules and actions which suppress the emergence of innovative combinations. Herein lies the nature of "government failure." Vitality is drained from the economic system in favor of control. Scott Greer, writing on the bureaucratization of the modern city, states:

> Bureaucracy may or may not be an efficient productive system, but it is an effective instrument of social control. The Nazi party could never have devised a means for governing Germany, but in the bureaucracy of the Prussian Empire and those of the various petty states, an instrument stood ready. Good, rule-ridden Germans operated the state for Hitler. So might the crisis of a no-growth, stagnating economy be handled in the United States, with control of the people through control of bureaucratic heads and their empires, and the distribution of scarce resources through the same instruments.[70]

[69]Lösch, p. 315.

[70]Scott Greer, "Bureaucratization of the Emerging City," in Blair and Nachmias, pp. 80–81.

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This parasitic bureaucratization is derived from politically driven forces which are activated because the State has the power to coerce the transfer of wealth from some individuals to others. The effect on economic progress is devastating.

Arguments for the organization of the post-interventionist city presented above urge that coercion be abandoned and replaced by voluntarism for both efficiency and equity. Legions of urban public-service personnel, whose product is unclear at best, could find productive work (work for which demand exists) within the market economy of the post-interventionist city. Many would probably find positions similar to those previously occupied (e.g., public sanitation workers might form their own refuse disposal companies). Others would be absorbed by the dynamics of a free economy.

There is no question that the poor will always be with us if we adopt some arbitrary notion of "poor" being the bottom "x" percent in terms of family income within any territorial unit, be it a city or the United States. In truth, there are very few truly poor in the United States if the world's poor are used for comparison. One may hardly take heart in such an observation no matter how true it may be. It is surely to the taste of most Americans to live in a society in which the indigent are cared for by those of greater fortune or industry. I believe active moralists and ethicists can mobilize private resources in an effective, non-coercive way to sustain, incrementally, the needs of the indigent.

Would the same number of individuals be subsidized to the same degree projected by the "Great Society"? Undoubtedly not. Nor would there be politically contrived constituencies of clients upon whom bureaucrats live and politicians thrive. The question is not whether all poverty can be eliminated, because it cannot. Instead, the question is what system generates the greatest wealth and the greatest freedom in its allocation, thereby providing the greatest possibility for charitable acts? Clearly, the market, operating as freely as possible in an environment of minimal government, meets those criteria.

Finally, the general acceptance of the post-interventionist (or non-interventionist) city requires that individuals place a premium on economic and personal freedom. Such an acceptance, of course, would mean a significant modification of existing institutions that have been insulated from competition. Ideally, the post-interventionist city will be characterized by the constant, gale-force buffeting of competitive action, eroding a weak firm here and redeveloping another property elsewhere. Few structures or patterns of relationships will stand the test of time as values and technology interact and change. Centrality

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in locational behavior will remain a forceful principle, but the activities which bid for central location will shift. The fluidity of these shifts in terms of minimization of transaction costs will be the hallmark of the post-interventionist city, and the ability to account for externalities and to internalize them will be a measure of its success.

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AN EVALUATION OF THE POST-INTERVENTIONIST CITY

M. L. Greenhut

How do I critique an article that shares my belief that the market system is the most effective allocator of resources an economy can have, including the urban economy? How do I critique Sommer's disgust with the federal government handouts, spending excesses, lobby interest impacts, ad nauseam? Art Deco enthusiast constraints on free enterprise, historic preservation to suit a few, enterprise zones which generate uneconomic locations, and the industrial hostage issue are all interventions which appall those of us who favor economic freedom rather than bureaucratic interferences and controls.

How do I critique Sommer's thesis that we do not need government to protect minority interests – or for that matter majority interests – and that the market economy can even resolve the externality problem via selected improvements in property rights? How do I critique his claim for a property rights solution when in fact Charles Stewart and I argued strongly against EPA, CPSC, and OSHA regulations in a recent book (1981)? Indeed, it was our contention that in place of the standards being formulated, the lawyers, the MDs, and alas even the economists in these agencies should *in effect* be returned to the courtrooms, the hospitals, and private businesses or academia. We particularly critiqued the right of bureaucrats to issue rules that others must follow. And we proposed instead a property rights solution where injured parties can easily obtain legal action against wrongdoers. By minor change in perspective or in property rights, the marketplace could easily cover the costs of the external diseconomies that the EPA, CPSC, and OSHA people have been trying to eliminate by regulation after regulation.

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Take for example the marketplace bubble concept. This approach to pollution would sharply alter EPA interferences and in the process eliminate the need for the bureaucratic interferences and excesses which have characterized that agency in recent years. Or consider the federal income tax. Even down to using simple income tax forms à la Hall/Rabushka postcard filing plan, I would propose that there are ways to accomplish what in effect are marketplace solutions in place of government regulatory interferences.

How do I also critique the last part of Sommer's article where he presents his view of the post-interventionist city, when I happened to write (1974, pp. 314–316) that competitive entry and exit will equilibrate profits (and utilities) over the economic landscape? The upshot of my analysis was that improperly located firms/cities and excessively large or small firms/cities will in time be altered by free competition to the point where rates of return and sizes are commensurate with basic economic and social forces. In particular conformance with Sommer's recording of interventionist errors, as well as with his view of how the market-oriented city would work, I happened to write that "given sufficient time, the firm and the industry would relocate while the city either disintegrates or acquires new character" (p. 315). Most vitally, my conclusion followed 314 pages of microeconomic theory that established the welfare-maximizing properties of a competitively based space economy, as I shall in fact indicate later on in this paper.

Feeling as I do, how can I object to *anything* Sommer wrote? I can't – but I *can* propose that he might have also done the following: although, in fact, I will refer below to another paper he should have written, he could actually have set forth some of these thoughts as a preamble to the article I am critiquing.

I propose that Sommer needed certain materials (in substance, proofs) to precede the contents of his "Post-Interventionist City" article. These materials (for example, in the form of *another paper*) could begin (and I am guessing at Sommer's probable preference for the Austrian school over the Chicago School) with an explanation of *what is the firm, who and what is the entrepreneur*. He could then enter into a brief discussion of why disequilibria exist, and that given such disequilibria (à la von Mises, Hayek, and Kirzner), dynamic market conditions would move the system towards the end of maximizing consumer wants, while providing efficient production *and* locational distributions. To be much less than humble, I would in fact suggest that he could condense into a handful of pages chapters 5, 12, and 13 out of one of my own books (1974) to indicate that these desirable results would ensue for a free people who are only con-

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strained by law against cornering, engrossing a market, or colluding. All this essentially would be in conformance with Adam Smith's caveats.

Now, the above basic propositions derive from a critically important contention, namely that the space economy (including the city itself) *is* oligopolistic—see Greenhut (1974), chapter 4, and a developing body of subsequent literature, e.g., Benson (1980) and Norman (1981). Even Chamberlin's original suggestion that barbers are engaged in monopolistic competition does not conform to the spatial world we live in; for even in just a small downtown section of New York City, or a section of Santa Fe, or throughout all of Sweetwater, the barbers and their shops are oligopolists. Of course, you may interject the concern that this is bad, for do not most economists contend that oligopoly markets are inefficient? In fact, in one of Galbraith's recent propaganda pieces (*Houston Chronicle*, August, 18 1981), he went so far as to claim that oligopoly equals monopoly, mergers of large firms are bad even if rival firms remain, and *no microeconomic theory exists to the contrary.* And if oligopoly markets are bad, as Galbraith claims – or for that matter, probably most economists – regulations by bureaucrats are therefore needed; in turn, Sommer's "Post-Interventionist City" article would fail. Happily for that paper, as well as the paper I am proposing for him, he can point out that Galbraith simply has not absorbed the recent literature which *proves* the efficiency of the oligopolistic economy.

Therefore, in the paper that I am suggesting Sommer should have written, he can point out that Galbraith and cohorts have regularly failed to recognize the fact that there exist two main types of oligopolies: the collusive (organized) oligopoly (i.e., the cartel) and the competitive (unorganized) oligopoly. Most significantly for all of us who believe in the free enterprise economy, the latter oligopoly form can be shown to be optimally efficient—directly so, as in Greenhut (1974) or *in effect*, as in Demsetz (1968) and Baumol (1981). Barring pure monopolization it can further be shown that the oligopolistic spatial world we live in moves dynamically towards the end of maximizing total welfare (and individual freedom), provided we can eradicate the predatory behavior that was stressed by Adam Smith so long ago.[1]

[1]It can be shown that the basic AR = MC = AC relation of pure competition theory (which for economists indicates efficiency in production and the maximization of consumer satisfaction in a free enterprise economy) holds fundamentally in the real world of spatial oligopoly. Modification of the above relation is confined to the fact of negatively sloping AR curves, hence existence of an AR > MR condition. It is shown, however, in Greenhut (1974) and in subsequent papers (Greenhut (1978), Dorward's

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After Sommer has provided an analysis which establishes the basic efficiency properties of a market economy, he can demonstrate locational and market area efficiency.[2] Then he can turn his attention to the downtrodden, the misfits, and the infirm. Sommer could easily demonstrate, à la David McCord Wright, that though financial power can be awesome, worse than financial power is political regulatory abuse of the public by supposed do-gooders. Economic analysis of the typical government agency's bid for increasing power and size, when applied alongside specific examples of regulatory excesses, could easily establish the thesis that the proper function of government is the protection of individual rights, including freedom of contract and private property. Under limited government, individuals would keep the major part of their incomes and be better able to help others via *private* charity. Surely even the physically handicapped can be extended help without coercing other free people and businesses in the selection of their own activities and charities.

Sommer could then conclude his paper by indicating that a *competitive* oligopoly marketplace, where externalities are resolved by special property rights, and where the infirm are helped by special institutional assistance, will generate maximum satisfaction and output. The upshot of this would be that cities will be the way all

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critique (1981a), Greenhut's reply (1981), and Dorward's subsequent agreement (1981b)) that the differential AR > MC is strictly based on the different levels of behavioral uncertainty prevailing under competitive oligopoly market conditions. The result is that the final equilibrium position is a transform of AR = MC = AC. Somewhat similar findings have been set forth in papers by H. Demsetz (1968) and most recently by W. Baumol (1981).

[2]The locational facets of the space economy were shown to approach optimal distribution for firms, including the market spaces surrounding firms (Greenhut (1974), chapters 12 and 13; John Greenhut and M. L. Greenhut (1975); M. L. Greenhut and M. J. Hwang (1979)). I would even suggest that this holds for individuals too. This is not to say that short-run errors do not occur (corresponding, in a sense, to enterprise zones). In still other words, best results *do not* take place, for clearly in any system involving human beings, errors will be made and bankruptcies will occur, which is the way things must be. Note most vitally, however, I do claim that free competitive entry and exit *along with infrastructure developments* will lead in the long run to effective locational distributions. I would go so far as to propose that even if mergers are permitted (see M. L. Greenhut and H. Ohta (1976, 1978)) and identification is made of what, in fact, is a collusive barrier to entry (John Greenhut and M. L. Greenhut (1977)), the free enterprise economy will be efficient and satisfy consumer preferences. This optimality will also apply to locational distribution (hence, city form) and market area spaces. *The requirement for optimality is that competitive entry and exit must exist for every firm and person.* This is the sole requirement for the *second-best, long-run optimality* results that man can attain. Applying the regulatory power of fallible human beings in government agencies, especially congressmen with backgrounds in law, can only destroy the natural *trend* to efficiency that the marketplace economy can offer.

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consumers (not just minority or even a majority of voters, but *all* people, voters and nonvoters) want. In other words, the way we spend our dollars and apply our skills and efforts will determine the character of our cities. Most fundamentally, the marginal dollar *in effect* controls. Sommer can then state finally that since he has now *proven* his departure point specifically, his second paper (to be entitled "The Post-Interventionist City") covers selected subject matters, including Art Deco, enterprise zones, and other interferences.

There are many – especially in the Austrian school – who would argue that all the State must do is protect our property rights, such as our freedom of contract, and of entry into or exit from the world of business. The result of this freedom would be an optimal allocation of resources. I agree with this line of thought which, simply stated, means that *personal* utilities in consumption are maximized under conditions of free exchange. Since Sommer posits his entire case on individual freedom, it would seem that in this sense his paper is complete.

Kirzner and other modern "Austrian" economists reject the model of perfect competition that Chicago economists rely upon. They argue that the Walrasian general equilibrium extension of perfect competition amounts to a definition of a market in which no decision made is ever disappointed. To the extent that Chicago economists require perfect competition to verify *their expectation that a free enterprise society can yield optimal results*, their case fails since their analysis is tautological. So where are we? If simple monopoly (or its equivalent) prevails, the P-MC inequalities indicate to Chicago and other economists that free exchange is insufficient. If only pure competition suffices, the Austrian argument against the Chicago school applies. And what about disequilibria?

The real-world entrepreneur is an action/reaction decision maker of the von Mises order. I therefore agree that we must focus attention on a dynamic decision maker who errs, who oftentimes wants to collude, who invariably wants to take advantage of opportunities, and who most vitally needs freedom of contract and of exit and entry. It is interesting to note that this dynamic entrepreneur is a basic part of the world of spatial oligopoly. Moreover, the many forms the spatial oligopoly market can take in the short run, including its kinky demand curve possibility, center attention on disequilibria. It is via the process of market adjustments that we ultimately derive the competitive spatial oligopoly equilibria conditions that were sketched above in footnotes 1 and 2. Most importantly, by applying a well-defined set of property rights, including freedom from *organized* oligopoly (i.e., the spatial economy counterpart to monopoly), the

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Austrian market process can be shown to yield the advantages of free exchange that its proponents claim for it.

Using my analytical framework, therefore, we can reach the Austrian position of contending that personal freedom along with a well defined set of property rights will yield optimal results. Furthermore, I contend quite uniquely that the Austrian thesis *is* verifiable *within the analytical system of the so-called Chicago economist, the Harvard economist, and even those who contend the need for countervailing powers.*

To sum up, *given* Sommer's implicit assumption that the market economy is an efficient allocator of resources; that it provides mankind with maximum total welfare, consumer satisfaction, and individual freedom; that present enterprise shortcomings in the form of pollution, worker safety and health, consumer product safety, and the like could be resolved by slight alterations in property rights, his view of the post-interventionist city is certainly one we can agree with. Since the relevance of his implicit assumptions can be established by formal economic theory, and since his results rest on the existence of individual freedom, I can concur with the thrust of his paper.

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CANCER'S UNCERTAINTIES AND PUBLIC POLICY

William R. Havender and Elizabeth M. Whelan

An unusually intractable policy problem of environmental pollution and toxic waste disposal is how to deal with the risk of chemically induced cancer. Many features of this issue make this policy task inherently complex, such that decisions must *necessarily* be made in the context of uncertainty and incomplete knowledge. In other words, analytically "perfect" solutions, of the sort beloved by scientists and engineers, cannot usually be found. Instead, one or another strategy for coping with uncertainty must be employed.

Why *must* science be uncertain about the causes and prevention of cancer? Why, indeed, is cancer a matter of such unique public concern in the first place? And what policy alternatives might be entertained to handle the peculiarities of this problem? This paper will be devoted to these questions.

I. Cancer's Causes: Proofs and Evidence

First a few facts about cancer. It is not a single disease but a large collection of them, which differ one from another in causes, in the particular organ and tissue giving rise to it, in the most effective form of therapy, and in prognosis. Any organ of the body may become cancerous, but the large majority of lethal cancers involve the intestine, the lungs, the breasts, and the sex organs (chiefly the prostate and uterus). Common to all of them is an uncontrolled growth of altered cells that have arisen (some think by mutation) from normal cells. Such malignant cells can invade surrounding normal tissues,

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exerting physical pressure and competing for nutrients. Cancerous growths can also spread, or metastasize, to areas of the body remote from the primary tumor site, repeating their deleterious effects in these multiple new locations.

The salient fact about cancer that accounts for the high degree of public concern is that it is a common and, with some exceptions, largely incurable disease. About one in four or five of us will develop cancer of one type or another at some time in our lives. This is a much larger fraction than used to be the case, although this increase is *not* due to there being a sudden epidemic of cancer attributable to our industrial society. Rather, it is a consequence of the great reduction in mortality from infectious diseases (tuberculosis, diphtheria, pneumonia, smallpox, polio, and others) which public health measures and modern medicine (especially antibiotics and vaccines) have achieved in this century. Now almost everyone can expect to reach the age where cancer, which is largely a disease of the elderly, can develop. Cancer-incidence figures that have been corrected for the larger numbers of people living into old age (called "age-adjusting") show that, with one exception, the overall incidence of cancer has been rather steady or slightly decreasing since 1933, the first year for which all states had to centrally record the causes of all deaths.[1] The exception has been the large rise in respiratory cancer, for which smoking, not "modern industrial pollution and chemical exposures," is by far the largest cause.

Proof of Causation

What is known in general about the cause of cancer? As a chronic disease, cancer is particularly difficult to deal with. The criteria for proof of causation in this case are less rigorous than for infectious diseases, but involve a number of concepts that intuitively strengthen

There are five general principles concerning proof of causation. Often not all of them can be applied to a particular type of cancer, but the more that can be, the stronger is the case for causation. The first criterion that must be met is that exposure to the suspected agent must precede development of cancer. While this may seem obvious, it is often difficult to ascertain when the cancer takes a long time to develop. Over the course of 5, 10, or 20 years, an individual may be exposed to any number of potential carcinogens, each of which could be the cause of cancer. Moreover, once the disease is present, it may

[1]R. Doll and R. Peto, "The Causes of Cancer: Quantitative Estimates of Avoidable Risks of Cancer in the United States Today," *Journal of the National Cancer Institute* 66 (1981): Section 4.1 and Appendix D.

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be difficult for an individual to remember what he was exposed to many years ago.

The second principle of causation is that the observed relationship between a substance and a disease in one experiment must be borne out in other experiments. Again, this is difficult to document for humans, because it is not likely that the circumstances surrounding one set of individuals can be replicated. Nevertheless, if the same relationship between cancer and the suspected agent is seen among different, but similar groups of people, it's more likely that the association is real.

Third, the stronger the association between cancer and a particular exposure, the more reliable is the evidence that the agent is responsible for the cancer. This means that as the proportion of those exposed to the agent grows, the more likely it is that the agent leads to cancer. Fourth, to prove causation, the substance should cause cancer in and of itself, without the addition of other carcinogens. It is always easier to prove causation if only one agent, rather than a combination of agents, is associated with the disease. In particular, when more than one agent is suspected, the case for causation becomes obscured by time relationships: We must determine which agents were present first and to what extent each agent is responsible for the disease. With multiple exposures, it may not be possible to tell if one or all of the agents were necessary for cancer to develop. The more specific we can be, the better.

The last principle regarding proof of causation is that a logical mechanism exist by which we can explain how a particular agent causes cancer. A good example of this is lung cancer and cigarettes. The changes that occur in lung tissue exposed to cigarette smoke have been well studied, and the evolution of cancer from this exposure comes as no surprise. The association is further supported by a dose-response effect, where heavy smokers get lung cancer more often than light smokers.

Decisions to ban or regulate the use of potential carcinogens generally rest on how well these five principles of causation can be applied to human data. As fewer criteria are fulfilled, the basis for regulations designed by legislators to control the use of potential carcinogens becomes less rigorous. Scientists can rarely collect human data that fulfill the five principles of causation. Thus, instead of saying that an agent "causes" cancer, we normally say that an agent increases the *risk* of cancer. For example, if a substance is shown to increase the incidence of cancer in humans, this is evidence that the substance is a true cancer-risk factor. On the other hand, if a substance has been

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shown to cause cancer only in laboratory animals, it is classified as a hypothetical cancer-risk factor for humans.

The decision about the carcinogenicity of a substance to humans falls on legislators, who must answer three questions: Is the material carcinogenic? How carcinogenic is it? And, how carcinogenic is it to humans? It is well established that our chances of getting cancer are highly influenced by "environmental agents" (see footnote 4). This insight is deduced from the fact that the incidences of particular types of cancer vary greatly from place to place around the globe, and also from time to time. Liver cancer, for example, is common in parts of sub-Saharan Africa, but rare here. Breast cancer is common here but rare in Japan, whereas stomach cancer is common there and uncommon here. That this is not due to a genetic difference is shown by the fact that Japanese immigrants develop within one generation the cancer patterns typical of the United States. Lung cancer, seldom seen at the turn of the century, is now the leading cause of cancer death among men, and is rapidly on the rise among women as well, reflecting the historic smoking patterns among the sexes. Persons of Scandinavian and Celtic descent do not have high rates of skin cancer when living in Northern climates, but do when they move to the tropics (where they are exposed to more sun). By a careful comparison of such variations, the World Health Organization concluded in 1964 that "the majority of human cancer" was influenced by "extrinsic factors."[2] This early estimate has been updated and confirmed: Currently the best estimate is that 75 or 80 percent of human cancer in the United States is influenced by environmental factors.[3] This fact raises the hope that cancer, if not curable, might be preventable, and it has led to extremely diligent attempts to identify the causative agents.[4] It has also resulted in a vast expansion of the regulatory apparatus set up to deal with these hazards.

[2]World Health Organization, "Prevention of Cancer," Technical Report Series 276, Geneva, 1964.

[3]Doll and Peto, p. 1205.

[4]These agents are by no means to be equated with "chemicals" or "pollutants," a common misinterpretation. Instead, the estimate refers to the *total* sources of environmental differences, which are in the main related to cultural and personal practices. Whether or not one smokes, chews betel nut, chooses to reside in sunny climes at high altitude, eats fibrous or fatty or pickled foods or moldy peanuts or corn, drinks alcoholic beverages such as Calvados, is sexually promiscuous or abstemious, or bears one's first child at an early or late age are all factors that have been shown to be correlative with, and in some cases causal to, particular cancers. Only a small fraction of all cancer in the U.S. is presently thought to be attributable to workplace chemicals (4 percent) or to general environmental pollution with manmade chemicals (2 percent). Doll and Peto, pp. 1245, 1251, and Table 20.

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Despite the diligence of the effort to find causes, only limited (though extremely important) success has been achieved. Consensus has been reached on the main cause of lung cancer and on a variety of occupational cancers,[5] but in these cases the proportional increase caused by single factors has been quite large. This does not seem to be the case for many common cancers (e.g., breast and colon), which makes it hard to tease out particular causes in these cases. Another difficulty in identifying causes is the stochastic, or statistical, nature of cancer; that is, among a group of similarly exposed persons only some of them, seemingly at random, will actually develop cancer. Not every smoker of high-tar cigarettes contracts lung cancer (in fact, only about one in five does), and not every worker who worked with asbestos comes down with mesothelioma (a rare form of cancer associated almost exclusively with exposure to asbestos). An even greater problem in connecting causes with effects is posed by the long latency of cancer, where a period of one or more decades passes between the commencement of exposure to a causative agent and the manifestation of symptoms.

Types of Evidence and Problems of Uncertainty

There are three main kinds of evidence that are used to try to establish whether or not a chemical poses a cancer hazard to humans: epidemiology, animal bioassays, and short-term tests. Each has advantages and disadvantages.

1. Epidemiology

The first of these, epidemiology, is the study in humans of the patterns of occurrence of disease and of exposure to various suspect agents. This tool has the great virtue that it directly identifies human-risk factors; once a carcinogenic agent has been identified, there are no further problems of fundamental interpretation as there are with animal and short-term tests. But it suffers from several inherent limitations. For one thing, it is not a very sensitive technique, which means that it is difficult to establish small effects with statistical confidence – "small," of course, means proportionally; this could still translate into many thousands of cases annually for a sizable population. This is due, in part, to the difficulty of assembling reliable information on large numbers of people, whether this is by means of interviews or examining medical records. It is also due to the difficulty of eliminating "confounding variables" from the comparison

[5]Doll and Peto, Tables 11 and 19.

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groups (i.e., eliminating all differences between the groups to be compared that may be spuriously generating, or concealing, a causal relationship). This can be a problem even when the carcinogenic effect under investigation is large. However, when it is small (such as the suspected effect of saccharin on bladder cancer, or of hair dyes on breast cancer), the problem can be insuperable. The use of large numbers of subjects and great care in matching up the comparison populations can reduce the problem

Epidemiology's usefulness is also reduced by the difficulty of assembling true, zero-dose control groups. For example, if we wanted to test the hypothesis that caffeine was carcinogenic, it would be hard to find a sizable group of people with *no* exposure to caffeine since it is a constituent in coffee, tea, Coke, and many other commonly used foods. One would have to look at groups like the Seventh-Day Adventists; but these individuals' habits differ in so many other ways from those of ordinary people that confounding might occur.

Complicating the limited sensitivity of epidemiology is cancer's long latency, which means that conducting a study among people who currently have cancer entails asking questions about their personal habits and occupational and medicinal exposures two or three or four decades in the past. People's memories that far back are not usually very accurate, and estimates of dose tend to be even less reliable. Multiple exposures to suspect agents are common (diet pops, hair dyes, chlorinated water, X-rays, cigarettes, etc.), so that attribution of a particular instance of cancer to any one of them is difficult. The picture can become even more complex because of the possibility of interaction between suspect agents. (Smoking, for example, greatly increases the already elevated chance that asbestos workers will develop lung cancer, so should we attribute it to the smoking or the asbestos?)

A final, serious limitation of epidemiology is that it cannot help us with new chemicals to which humans have never been exposed, or to which exposure has been occurring for only a relatively short time. (The latency period may not have had sufficient time to pass, so negative results cannot be conclusive, and even a positive finding may underestimate the full effect.) About a thousand new chemicals are introduced into commerce each year, so that this is a significant circumspection.

Despite these shortcomings, epidemiology can be used, even when it has yielded a negative or equivocal result, to set an upper boundary on the risk to humans of substances to which they have been exposed for adequately long periods. For there would be certain levels of carcinogenic activity that *could* have been seen in the study with

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statistical confidence had it been present. Not seeing this activity, then, at least says that the suspect substance is not a "strong" carcinogen; it is at most "weak" (the actual numerical meaning to be attached to the words, "strong" and "weak," would, of course, depend on the details of the particular study).

Finally, it must be noted to epidemiology's credit that every human carcinogen now known has been identified by means of epidemiology; this tool has established the very phenomenon of human cancers resulting from environmental exposures commencing many decades before clinical symptoms were evident.

2. Animal Bioassays

Because of the limits of epidemiology, other means are used to identify the human cancer hazards from chemicals. The predominant surrogate currently in use is animal bioassays. These are studies where the suspect chemical is administered to laboratory animals, usually rats or mice, and the animals monitored for the growth of tumors. Typically, the chemical is given to the animals in their food or water (or by stomach tube if the substance is unpalatable) for long periods, often their entire lifetime. The key advantages of bioassays are: Rodents live only about two years so the time required to observe a tumorigenic effect is reduced from decades to two or three years, and one can deliberately test any specific chemical of interest. This is especially important for new chemicals that are being considered for the marketplace. The disadvantages of bioassays, however, are substantial. In particular, these tests are expensive – a thousand dollars an animal for a lifetime study is a typical cost. Thus, a standard-sized test on a single chemical involving an untreated (control) group and low- and high-dose groups with 50 animals of each sex, at each dose (300 animals in all), would cost well in excess of a quarter million dollars. Even such a test, however, would have a limited sensitivity, since it would probably never pick up a chemical that caused a one percent incidence in high-dose males. And, such a chemical might well be declared "safe" even though it would be capable of causing many tens of thousands of cases of cancer a year in humans.

It is to compensate for this limited sensitivity that high doses are commonly employed in animal bioassays. In general, the incidence of cancer will rise as the dose increases, up to the point where the animals are dying off prematurely from simple poisoning. Hence, to make a bioassay as sensitive as possible, a dose will be included that is the maximum the animals can tolerate over their lifetimes without succumbing early from poisoning. This is the so-called "maximum tolerated dose" or MTD.

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While this procedure undoubtedly maximizes the chance that even a weak carcinogen will be picked up, it introduces other sources of uncertainty. Perhaps the physiological events taking place in dose-stressed animals do not occur at all, or at least not in proportion, in normal animals. So the outcome observed in highly-dosed animals would not be valid at the much lower doses common in human exposures.

This reasoning leads us directly to the problem of dose response; specifically, to the question of whether the risk at low dose can be estimated by simple extrapolation downwards along a straight line from the risk observed at high dose. Such a risk/dose relation is called a "linear" dose response. And while this may be a reasonable guess when the extrapolated dose is not very far from the experimentally observed dose, one is very uncomfortable with relying on such an estimate when extrapolating to doses 100 or 1,000 times smaller than the experimental dose, as is often the case. The critical question is whether one or more inflection points (or a threshold) exist in the dose-response curve, in which case the true low-dose risk could be much smaller than under the linear assumption.[6]

In theory, one can readily design experiments to find out what actually happens to the cancer rate at low doses comparable to human exposures. However, the incidence of tumors will get small, and so much larger numbers of animals would have to be used in order to detect these tumors with statistical confidence. That would mean doing a test with thousands of animals and multiple doses ranging down to the dose of interest. This would be prohibitively expensive,

[6]There are many theoretical reasons for thinking these must frequently exist. For one, the human organism has evolved in a sea of naturally occurring carcinogens, and has likely developed defenses for coping with these in normal circumstances. In fact, we have direct evidence of such a defense in skin pigmentation, whose level determines sensitivity to UV (sunlight-induced) skin cancers. Another defense is DNA repair, which many identified enzyme systems can accomplish. One genetically caused defect in DNA repair, xeroderma pigmentosum, leads, in fact, to much higher susceptibility to sunlight-induced skin cancer. Other enzymatic systems in the liver are constantly at work cleansing the blood of toxic materials. Any of these systems can be saturated or overloaded by sufficiently high doses, and there is little reason to expect that cancer effects seen only in animals whose normal defense mechanisms have been overloaded by high doses must necessarily be predictive, either qualitatively or proportionately, of the results to be seen at physiologically normal doses. In addition, it is known that some enzyme systems that metabolically *activate* carcinogenic substances are inducible by those same substances. For these, the dose response must be non-linear, curving upwards at high doses. Finally, many apparent carcinogens may be acting by means of "promotion" rather than by "initiation." Practically nothing is known about the dose response of promotion; there is not the slightest theoretical reason for thinking its dose response might be linear in general.

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not to mention logistically difficult (e.g., acquiring thousands of animals of identical genetic background and age at more or less the same time, labelling them and maintaining records, and so forth). And, in any case, the test would pertain only to the chemical of immediate interest, so that it would have to be repeated for every chemical investigated. This is clearly impractical on a regular basis; thus, we are reduced to making extrapolations (guesses) about the expected risk of cancer at low doses.[7]

Many thousands of words have been devoted to the problem of estimating low-dose risks from limited high-dose data, and some highly sophisticated statistical models for extrapolation have been advanced. The hard fact remains, however, that the verifiable dose effects are similarly compatible with all of them (not surprising, since the models were developed to fit the available data), and so cannot distinguish between them; yet the models differ by factors of hundreds or thousands in their estimates of the size of the risk to be seen at very low doses. Of all the various models, the linear one is not only by far the simplest mathematically, but it also has the virtue of being the most "prudent"; that is, if its estimates are in error, they are virtually certain to err on the side of *overpredicting* the true risk. This means that if a low-risk estimated by means of the linear model is considered to be negligible, then one can feel quite secure in this judgment. For this reason, the linear model is often adopted as a prudent way of dealing with this profound uncertainty. However, when the estimate yielded by the linear assumption is not so negligible (as is the case with saccharin, where the FDA estimated an annual incidence of about 1,200 cases of bladder cancer per year[8]), the procedure leads to dispute.

The other intractable problem with animal bioassays concerns whether rats and mice can be regarded simply as "little men," or whether there can be, in any specific instance, an important physiological difference in the way rodents and higher primates handle a

[7]Only one such "megamouse" test has been carried out. In brief, the chemical used induced tumors in only two organs, the liver and the bladder. For liver tumors, the incidence at the lowest dose (which was only five times less than the highest dose) was excellently predictable from the incidence seen at the higher doses by a linear model, but for bladder tumors, there was a clear inflection point, and the low-dose risk would have been overpredicted many-fold by linear extrapolation from the higher doses. N. A. Littlefield, J. H. Farmer, D. W. Gaylor, and W. G. Sheldon, "Effects of Dose and Time in a Long-Term, Low-Dose Carcinogenesis Study," *Journal of Environmental Pathology and Toxicology* 3 (1980): 23, 27, and passim. Nature is not yielding her secrets easily!

[8]Office of Technology Assessment, U.S. Congress, "Cancer Testing Technology and Saccharin" (Washington, D.C.: U.S. Government Printing Office 1977), p. 88.

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carcinogen. This uncertainty affects both the qualitative outcome (is this chemical a carcinogen in humans?) and the quantitative outcome (can we infer the degree of risk to humans from the degree of risk seen in rodents?). Again, arguments run on both sides of this question and science is not able to offer a definitive judgment, since we are limited to unwitting, and hence almost always unmeasured, exposures for practically all of the human data. The fact that all but one of the proven human carcinogens (the exception is arsenic) have been found also to cause cancer in laboratory animals favors the "little men" argument, at least qualitatively.

The crucial question, however, is: Can we expect, just because we have found conditions under which a chemical will cause cancer in rodents, that it will pose a true risk in man? This question becomes even more unsettling when one cogitates upon the peculiarities of the experimental conditions under which carcinogenicity in animals has often been established (e.g., high dose regimens, or, as in the saccharin experiments, *in utero* exposure). Hundreds of chemicals have by now been shown to cause cancer in animals under one or another set of experimental conditions, including table sugar, pepper and vitamin D.[9] Is is really reasonable to assume on this basis that these substances imperil mankind? One would feel more confident in making such a prediction if a chemical had been tested in several mammalian species and was carcinogenic in all of them (that is, if the qualitative results in any one of them could be used to predict correctly the results in the others). But it is uncommon to have results on the same substance tested in more than two species (usually rats and mice), and even for these two species, discordant results are often seen.[10]

Even with these weaknesses, animal bioassays are the best means we have for assessing a chemical's carcinogenic hazard in those

[9]On the cancer risks from sugar, pepper, and vitamin D, see the following studies.

On sugar: "Tumorigenicity and Carcinogenicity Study With Xylitol in Long-Term Dietary Administration to Mice," Study no. HLR 25/77774, prepared by the Huntingdon Research Centre, Huntingdon, Cambridgeshire, England, for Hoffman LaRoche Co. Ltd., Basel, Switzerland, January 30, 1978. Available from the Food and Drug Administration, Rockville, Md.

On pepper: J. M. Concon, D. S. Newburg, and T. W. Swerczek, "Black Pepper (*Piper Nigrum*): Evidence of Carcinogenicity," *Nutrition and Cancer* 1 (1979): 22–26.

On vitamin D: G. H. Gass and W. T. Alaben, "Preliminary Report on the Carcinogenic Dose Reponse Curve to Oral Vitamin D_2," *IRCS Medical Science* 5 (1977): 477.

[10]In fact, in the famous saccharin rat studies, males but not females developed tumors (of the bladder). Thus, even within a single species under uniform test conditions, males failed to predict the outcome for females. Office of Technology Assessment, pp. 50–60. This weakens the basis for predicting human risk from these results.

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instances where we have only poor epidemiology data, or none at all. Some chemicals are such strong and reproducible animal carcinogens that there is consensus among scientists about their hazards. But in general, there is a continuity of results grading smoothly down to situations at the margin of statistical significance, or where there is reason to believe the MTD has been exceeded, or where there is dispute among pathologists whether the observed growths should be classified as tumors or not.

One highly important fact to come out of animal tests, which has not yet been incorporated into routine regulatory decision-making, is that the relative carcinogenic "potencies" of different chemicals – defined as the dose needed to give half of the test animals cancer – vary over a million-fold range. In other words, a dose of aflatoxin (the strongest carcinogen yet known) would cause a million times as many cases of cancer as the same dose of saccharin (the weakest carcinogen so far detected).[11] That chemicals' intrinsic carcinogenic hazard can vary over this enormous scale is a fact of central importance for sensible policymaking, since it forces one to set priorities and to pay attention to considerations of cost-effectiveness.

3. *Short-Term Tests*

In the last few years a new group of human surrogates has been under development, the short-term tests. These use bacteria or cells in tissue culture, and examine the capacity of test substances to induce mutations or other genetic damage. These have a vast advantage over animal bioassays in that they take only a few days or weeks to carry out and cost only a few thousand dollars per chemical. By far the best known and best validated of these is the so-called "Ames" test (named for its inventor, Dr. Bruce Ames), which seems to detect about 90 percent of chemicals that have been shown to cause cancer in animal bioassays and to have a low incidence of "false positives" (i.e., the obtaining of positive Ames test results for a substance that has been adequately tested in animals and found not to be carcinogenic).[12]

Still, certain classes of chemicals are missed by the Ames test, such as hormonally active carcinogens like diethyl stilbestrol (DES), and some chlorinated hydrocarbons (which include many pesticides such

[11]L. S. Gold, W. R. Havender, N. K. Hooper, C. B. Sawyer, and B. N. Ames (manuscript in preparation).

[12]J. McCann and B. N. Ames, "Detection of Carcinogens as Mutagens in the *Salmonella* Microsome Test: Assay of 300 Chemicals: Discussion," *Proceedings of the National Academy of Sciences (U.S.)* 73 (1976): 950–954.

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as DDT), that are proven carcinogens in animal tests or humans. Dioxin, for instance, which is the highly dangerous contaminant in Agent Orange, and the herbicide, 2,4,5-T, is an extremely potent carcinogen in rodent tests, but is Ames-negative. Some short-term tests detect substances missed by others, so that a carefully assembled "battery" may be the best way of utilizing them; but just what the best composition of the battery should be is a matter still under discussion.[13] Currently, the prime utility of short-term tests is in the preliminary screening of large numbers of chemicals for exceptionally mutagenic (hence, presumptively carcinogenic) ones, particularly those contained in complex mixtures of chemicals (such as urine, cigarette smoke, drinking water, air pollutants, foods, or cosmetics). Once suspicions have been raised by such a screen, full-scale animal tests can be scheduled.

These are the main kinds of evidence that are used for inferring whether a chemical poses a carcinogenic risk to humans. Currently, short-term tests are in use in thousands of industrial and university laboratories, and the National Toxicology Program/National Cancer Institute has a vast testing program in rats and mice underway, with a hundred chemicals placed under test each year. In addition, industry is carrying out a large number of animal tests, as marketing approvals are sought for new drugs and other consumer products. And, of course, a great variety of epidemiology studies are in progress at any given time. Thus, decision makers are faced with a large and steadily growing volume of information (generating the "carcinogen-of-the-month" phenomenon), with only some of it capable of unambiguously establishing human risk (namely, positive epidemiology findings) and the bulk of it raising questions about, but not clearly proving, the imminence of human risk.

This evidence forms a seamless continuum, without clear decision boundaries. It ranges from chemicals that show strong carcinogenic activity in several species to disputed results in others. Frequently it reveals discordant results between species or sexes or strains, or between animal tests and short-term tests, or between suggestive animal results and decades of safe use by humans. The evaluation of such varied data, and the inferring of the degree of human risk therefrom, is what goes by the moniker, "risk assessment." And while it sounds fancy and as though its practitioners know what they are talking about, I think it is apparent from the foregoing discussion that

[13]M. Hollstein, J. McCann, F. A. Angelosanto, and W. W. Nichols, "Short-Term Tests for Carcinogens and Mutagens," *Mutation Research* 65 (1979): 289–356.

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this is far from the case. Rather, science is really at its limits in most instances and cannot yield a single, consensus verdict concerning human cancer-risk factors from chemical substances. Decision makers must cope with this reality. In a word, with the uncertainty surrounding cancer's causes.

It may be that the best use of the scientific evidence will not be for yes/no decisions or for predicting absolute degrees of hazard (e.g., "x" cancers per year), but for *ranking* hazards. One might use uniform assumptions for the dose and species extrapolation problems, assign weights to the various kinds of available evidence, and then rank chemicals in terms of intrinsic hazard. This could then be combined with estimates of current human exposure to get a rough sense of the *relative* human health hazard posed by different chemicals. Uncertainties would exist, of course, even for this limited interpretation of the evidence, but one's chances of establishing sensible priorities would probably be greater than by ignoring these relative differences altogether.

II. Coping with Cancer's Uncertainties: Alternative Policy Responses

The Misuse of Prudence in Regulatory Policy

Given that science can raise many more questions about the potential causes of cancer than it can answer, what do we do about it? One response, the one that has dominated regulatory developments in the last several decades, goes by the name, "prudence." It is a way of coping with unknowns, and its practical prescription for regulatory policy is that if it is to err, it should always err "on the side of safety." Thus, the Delaney amendment (a food safety law) obviates all debate about the appropriateness of animal test procedures (such as testing at high doses, or *in utero* exposure) and species specificity (do results in lab animals truly tell us how humans would respond?) by mandating an automatic ban on any food additive that causes tumors in animal tests. (Certain food additives, such as those on the GRAS, or Generally Recognized As Safe, list, are not governed by Delaney.)

Another example of "prudence" carried to an extreme is OSHA's "generic" carcinogen policy, which was set forth in the *Federal Register* early in 1980.[14] Here, OSHA tried to deal with the fact that it had to relitigate certain of the same scientific issues over and over again in different rulemakings. These issues tended to recur because they *were* uncertain, particularly as they applied to specific cases.

[14]OSHA, *Federal Register*, vol. 45, January 22, 1980, pp. 5001–5296.

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These included such questions as the appropriateness of high-dose testing, the existence of thresholds, species specificity, how to reconcile conflicting evidence in different species, or between rodents and humans, how to count in benign tumors, and what to do about "promoters" (substances that are not capable of causing cancer by themselves but that can increase the cancer-inducing effect of other substances). All of these questions are still in active dispute within the scientific community. Nevertheless, OSHA's policy has been to declare them settled in such a way as to minimize the chance of harm and, thus, to err on safety's side. OSHA officials, for example, refuse to recognize an overdose in animal tests; they presume that safe doses (e.g., thresholds) for humans do not exist (or at least are not estimable from animal data); they consider rats, mice, and other laboratory animals comparable to humans in their response to carcinogens; they view a single positive test in any species as outweighing any amount of negative evidence in other species or in people; they assign equal weight to benign growths and malignant tumors; and they regulate substances that merely "promote" cancer in the same fashion as dangerous, totipotent chemicals.

There was a time when such "prudence" seemed to be a feasible and unproblematic way of dealing with these uncertainties. Chemicals capable of inducing cancer were thought, after all, to be quite rare. Tracking them down did not seem insuperable, and most of them were thought to be artificial, manmade chemicals. Ending human exposure to them would therefore be a simple matter of stopping activities for which we ourselves were responsible. But such has not turned out to be the case. As a result of the active search programs described above, hundreds of chemicals have by now been identified as carcinogens under the conditions of animal tests, and many more have been shown to be mutagenic in short-term tests (and hence are presumptively carcinogenic). Moreover, most of them have turned out to be of natural origin rather than by-products of industry.[15] Virtually any food or other consumer product (which usually are complex mixtures of many chemicals) will contain some carcinogenic or mutagenic compounds, or at least substances capable of being metabolized by the body into such (e.g., nitrites can be converted to the highly carcinogenic nitrosamines). It is now clear that trying to identify and eliminate every proven or presumptive carcinogen is a daunting and – if the item is to retain its utility at all – a frequently impossible task.

[15]Bruce N. Ames, "Carcinogens and Anti-Carcinogens," in *Mutagens in Our Environment*, Proceedings of the 12th European Environmental Mutagen Society Conference, June 20–24, 1982, Espoo, Finland (New York: Alan R. Liss, Inc., 1982).

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Compounding this is the fact that modern chemical analysis makes it possible to detect extremely low levels of trace components, as low as the parts-per-billion and parts-per-trillion range. Thus, what would have been considered "pure" with the techniques of one or two decades ago can now be seen to be teeming with infinitesimal contaminants. Attempting "prudently" to remove all detectable amounts of trace carcinogens is proving to be far more costly than originally envisioned.

Moreover, using the term "prudent" to denote these policies is misleading, since the term is not so much a description of a true attribute of a particular decision as of its wished-for result. In practical terms, regulators operate under restricted mandates; what might appear "prudent" to them in their confined view may not in fact be prudent when viewed from the perspective of consumers. The Delaney clause, for example, focuses narrowly on the cancer hazard that might result from the use of a food additive, but consciously ignores the *overall* health risk that might ensue from *not* using it. Banning nitrites would therefore be prudent in Delaney's circumscribed view, but would not truly be prudent from the perspective of the wider public facing the danger of botulism with no adequate substitute for nitrites. A ban on saccharin might similarly seem prudent in Delaney's view, but it would not appear prudent to those members of society who successfully use saccharin to avoid gaining weight (with all the associated health and psychological problems) or to manage diabetes.

Likewise, requiring that the chemical trichloroethylene be replaced in the decaffeination of coffee might have been prudent when it was learned that this chemical was a carcinogen (even though it is one of the weakest carcinogens ever detected in animals, on a par with saccharin, and only trace residues ever reached the public). But this step does not seem particularly prudent now that its then-untested replacement, methylene chloride, has also been shown to be a carcinogen. And lest it be forgotten: It was the Delaney-based ban on cyclamates in the late '60s that forced a great increase in the public's consumption of saccharin, a step whose wisdom is clouded now that we have learned that saccharin, too, is a carcinogen.

Complicating this issue even more are some perverse animal test results (alluded to earlier) that are hidden from the public in the technical literature or the files of the FDA. The following animal test results are noteworthy: a lifetime diet of egg yolks mixed with milk induced liver cancer in rats;[16] pepper applied to the skin of mice

[16]D. Nelson, P. B. Szanto, R. Willheim, and A. C. Ivy, "Hepatic Tumors in Rats Following the Prolonged Ingestion of Milk and Egg Yolk," *Cancer Research* 14 (1954): 441–445.

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induced a high incidence of malignant internal tumors; table sugar caused stomach cancer in mice; and vitamin D, a standard additive to milk to prevent rickets, caused cancer in laboratory animals (on the pepper, sugar, and vitamin D cases, see footnote 9). Clearly, no regulator would be so intrepid (especially after the saccharin fiasco) as to try to ban eggs, milk, pepper, sugar, and vitamin D. Some technical objection may, of course, always be found to rationalize not taking these findings as the basis for bans. But the fact that such pesky research results get interpreted away rather than taken at face value casts doubt on the reasons why mitigating interpretation is rigidly ruled out when the item in question is more in accord with the fashionable bogeys of the *Zeitgeist*, namely, manmade chemicals.

Aside from breathing life into the troublesome regulatory rule of "prudence," the uncertainties surrounding suspect carcinogenic chemicals have engendered another phenomenon. Uncertainty about the cancer potential of a given chemical means that one can neither prove that it is safe nor conclusively demonstrate that it is dangerous. As discussed above, this is a very common situation in cancer testing. No persuasive proof has been adduced that saccharin causes cancer in people, nor DDT, nor hair dyes, nor the agricultural use of 2,4,5,-T, nor water pollution, nor New Jersey air. But few scientists would feel comfortable in declaring them absolutely safe, since grounds can be found for criticizing any negative study. For instance, had it been larger, or longer, or had it checked out high-risk subgroups, or investigated the possibility of interactions with other environmental agents (e.g., promoters), or controlled for more confounding variables, or whatever, a hazard might have been identified.

The practical consequence of this indeterminacy is to magnify greatly the significance of deciding which side of a given proposition shall bear the burden of proof. The essential unprovability of either position puts great discretionary power in the hands of the side not needing to prove its position, which side can simply keep generating new speculative scenarios of hypothetical risks that its opponent must rule out. One side releases the hares, and the other must chase them all down. Thus, we can easily understand the crucial strategic utility of such regulatory tools as "rebuttable presumptions," and the determined efforts by virtually all regulatory agencies to require applicants for new products to supply *proof of safety*, rather than for the agency to have to advance evidence of probable harm before denying an approval.

Private Alternatives to Government Regulation

"Prudent" regulation, then, is far from a faultless method of dealing with the irreducible uncertainties associated with cancer. But is there

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any practical alternative that can handle cancer's uncertainties and act effectively to protect people from dangerous carcinogenic substances? Certainly. Three factors that *already* sharply constrain the risks that manufacturers can impose on consumers are: bad publicity, leading to loss of markets; the sobering prospect of being sued; and the oversight practiced on business by casualty insurers. It may be helpful to review a few cases illustrating the effect of each of these factors.

Concerning the first of these: When a few years back two people who had dined on vichyssoise produced by the Bon Vivant Co. (then a leading manufacturer of gourmet foods) died of botulism, the company went out of business. When the Bellevue-Stratford hotel in Philadelphia was found to be contaminated with the bacterium causing Legionnaire's disease, the hotel, despite being a venerable name in that city, was forced to close its doors. When Rely tampons were implicated in toxic shock syndrome, Procter & Gamble quickly withdrew the product from the market. When a DC 10 crashed in Chicago, there was a prompt response by air travellers to avoid DC 10's until there was assurance the problem had been identified and corrected. Thus, whenever hazards are clear-cut and imminent, consumers can be expected to react rapidly. This response supplies a strong incentive not only for companies to avoid actions that put the public at risk, but also to take swift measures to eliminate recurrences of those accidents that, in the context of ineluctable uncertainty, will occasionally occur.

Those accidents that do occur will expose the companies to the threat of being sued. It is worthwhile to refresh the reader's memory by reciting some of the tort cases currently in litigation or lately settled involving major corporations. An Oregon woman recently filed a $1 million suit against Dow-Corning Co. over a defective silicone breast implant, and a Brooklyn, N.Y., woman filed a $7.5 million suit against the same company for a similar mishap.[17] A woman who contracted cancer from her mother's use of DES filed a $10 million suit against Ely Lilly & Co.,[18] and another women won $1.75 million in damages from E. R. Squibb & Sons for the same complaint.[19] Firestone Tire and Rubber is facing 200 suits totalling over $100 million in connection with defective tire rims.[20] American Motors Corp. recently settled for $5 million with a man disabled in a rollover

[17]*San Francisco Chronicle*, April 28, 1982.
[18]*San Francisco Examiner*, October 14, 1981.
[19]Ibid., March 25, 1982.
[20]*U.S. News and World Report*, June 14, 1982.

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of one of its Jeeps.[21] General Motors settled in June with a Napa, California, couple for $17 million as a result of burns they received when the gas tank of their G.M. car exploded in a rear-end collision.[22]

At least 83 lawsuits totalling more than $2 billion have been filed in the Hyatt Regency hotel disaster in Kansas City.[23] A $1.5 billion class action lawsuit has been filed in California for health damages sustained by residents in the areas sprayed last year for control of the medfly.[24] At least $2.8 billion in compensatory and punitive claims, spread among 3,500 lawsuits across the nation, is pending against the A. H. Robins Co., the maker of the Dalkon Shield birth control device.[25] Procter & Gamble currently has over 400 suits outstanding against it in connection with its Rely tampon, totalling over $3 billion.[26] The Hooker Chemical Co. is being sued for more than $12 billion in connection with Love Canal.[27] And at least 10,000 asbestos cases are pending against the Manville Corp., the largest producer of asbestos in the United States, and more than 400 new cases are being filed each month. In one of these cases, a widow won a $2 million award.[28] Estimates are that asbestos lawsuits across the country may total more than $40 billion. In fact, on August 26, 1982, it was announced that Manville had filed a bankruptcy petition under Chapter 11, citing the overwhelming costs of the asbestos lawsuits filed against it.

This sampling is by no means exhaustive. What it establishes beyond a doubt is that the business of suing corporations for torts, including cancer torts (e.g., DES, asbestos), is seething with vitality. It also illustrates the important watchdog function (although some might prefer a metaphor based on vultures) carried out by lawyers in seeking to discover and to gain restitution for consumer harm. Finally, it highlights the fact that the sums at stake are stupendous, so large that even the dimmest profit-oriented management will get the message that *it pays* to identify in advance and to reduce public health hazards. Even if they don't get the message, their insurers will.

This brings us to the third powerful, non-regulatory force acting to reduce business-caused risks – the oversight role of casualty insurance companies. Such companies have a direct interest in monitoring

[21]Ibid.
[22]*San Francisco Chronicle*, June 14, 1982.
[23]*San Francisco Examiner*, August 28, 1981.
[24]Ibid., May 8, 1982.
[25]Ibid., June 18, 1982.
[26]*Wall Street Journal*, December 8, 1981.
[27]*Newsweek*, September 14, 1981.
[28]*Wall Street Journal*, June 9, 1982.

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and reducing the level of risk involved in the commercial activities of the companies they insure, since it will lower the likelihood they will have to pay off claims. Identifying risks, particularly novel ones, and supplying information on ways to reduce risks to their insurees or to responsible authorities, is a crucial part of their normal operations. For instance, insurance companies support the Insurance Institute for Highway Safety, an organization that identifies road hazards that contribute to the frequency and seriousness of highway crashes, and supplies the information to the state and local officials responsible for maintaining roads and highways. Clearly, reducing the occurrence of road accidents, and lessening their severity when they do occur, benefits the auto insurance industry by lowering payouts. There is also industry support for the Underwriters Laboratory, which inspects and certifies electrical equipment. Other insurers directly inspect their own insurees. The Hartford Steam Boiler Inspection and Insurance Co., for example, undertakes to inspect steam boilers and to insure those that pass muster against explosions.

Established non-regulatory mechanisms and entities do exist, then, to identify dangers and to foster business behavior that protects the public. In fact, there are swarms of beady eyes and brains out there scrutinizing innumerable local situations, restlessly watchful for the earliest signs of peril. Given the multiple layers of monitors that are active (the public, corporate management, contingency fee lawyers, and insurance companies) and the intensity of their motivation (one's own personal safety, enormous liability awards, and legal fees), these forces are probably far more pervasive and effective in promoting safety-conscious conduct than the slow pace of government regulation.

"There is only one way that you can get societal safety and that's out of liability – making it more expensive to do it in the unsafe way .... the Federal Government's efforts in getting a safe society are infinitesimal compared to what we do. It's the difference between a million-dollar verdict and a $500 fine," says Harry M. Philo, past president of the Association of Trial Lawyers of America.[29] "[L]awyers for the plaintiffs may come to be regarded as regulators without portfolio." This, says San Francisco lawyer Peter Weinberg, is already happening. "If you didn't have trial lawyers bringing suits," he says, "it would be hell getting manufacturers to provide protection."[30] And says Bernard Spring, president of the Boston Architectural Center, with reference to the Hyatt Regency collapse: "Litigation and insur-

[29]*New York Times*, July 30, 1981.
[30]*Newsweek*, March 1, 1982.

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ance premiums. That's a tool that works like crazy. I don't think we need much more than that to insure that people will be careful."[31]

III. Conclusion

Nevertheless, the special features of cancer pose unique problems for existing institutions which still need resolution. Of particular importance are the following.

1. Statutes of limitations vary from state to state. In New York, for instance, a victim has only three years from his last contact with a toxic substance to file a claim, a time period that is obviously inappropriate for chemically induced cancer where induction periods of two to three decades are the rule. This clear defect in the law reduces the incentives of companies to be alert to health hazards with long latencies. Statutes of limitations should, where needed, be remedied to take account of such hazards.

2. The statistical nature of cancer's action, where only a few out of a group of similarly exposed people will actually contract cancer (e.g., only one in five two-pack-a-day smokers of high-tar cigarettes develops lung cancer), can make it difficult to establish causal proof in a courtroom and hence pin down liability. For instance, if five workers out of a group of 100 come down with a rare form of cancer that normally is found in no more than one person in 100,000, this would be considered persuasive by an epidemiologist, but a jury or judge might wonder why the other 95 workers did not also get the cancer. To the extent that courts will not accept epidemiologically convincing (but not traditionally causal) evidence, the effect of potential liability on structuring decision incentives will be less than it should. The standards of evidence deemed acceptable by courts in these novel cases should therefore be examined and updated in the light of modern knowledge.

3. The long lag involved in the manifestation of cancer makes it difficult to document exposure. Memories have faded and records may have been lost. This is a major problem in the current litigation about DES. In this unusual instance, it was the *mothers* of the women stricken with cancer that were exposed to the carcinogenic agent during pregnancy. Dozens of drug companies have manufactured DES at one time or another, and a pharmacist may have pulled any of several manufacturers' DES off the shelf in filling a particular prescription. Failure to be able to document which particular manufacturer supplied the drug in a specific instance is in most states grounds for dismissing the case. However, California courts have

[31]*Wall Street Journal*, February 18, 1982.

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recently given standing to an innovative legal doctrine in an effort to remediate this situation: *All* the drug companies supplying DES at the time of a mother's exposure are being held jointly liable in proportion to their market share, unless a company can definitely prove that it had not supplied the doses in question. Clearly, the difficulty of precisely documenting sources and amounts of exposure that occurred two or three decades earlier is a common problem in cancer cases. This, of course, will diminish the effectiveness of liability as an incentive favoring cautionary steps against such long latency diseases. The California doctrine is at least an attempt toward correcting this problem, although whether it is the optimal solution is arguable.

4. A tremendous legal battle is now brewing over yet another aspect of cancer torts that is attributable to cancer's long latency. Is it the insurer whose policy was in effect at the time the exposure occurred that should pay off, or the insurer whose policy is in force when the disease first becomes manifest? This question is deeply involved in the present litigation over asbestos, and as yet there has been no final adjudication. Until this is cleared up and responsibility unambiguously assigned, the monitoring role that insurance companies should exercise over decisions affecting carcinogenic hazards will be blunted.

There are, then, original problems rooted in cancer's singularities and existing institutional rigidities that bear importantly on the capability of non-regulatory mechanisms to minimize the hazard to the public from chemical carcinogens. But that such mechanisms are in place and already operating is clear, and they are rapidly evolving and adapting to accommodate cancer's unique features. Thus, with these improvements our legal institutions will become more effective.The existence of these additional layers of protection should, therefore, permit some relaxation in regulatory "prudence." The burden of proof could, for instance, be shifted to the regulatory agencies by requiring them to demonstrate a reasonable probability of public harm before a product could be denied marketing approval. Such a major step may not be politically feasible in the near term. At minimum, however, regulators should pay more attention to assuring a company's financial capacity *to be responsible* for whatever harm its product might cause (for example, by requiring minimum levels of insurance coverage). Then they could be less concerned with requiring that every last residuum of speculative doubt about a product's safety be eliminated in advance of marketing. Once a company has demonstrated that its product is *reasonably* safe and that (concerning the remaining, inherently unresolvable uncertainties) it is

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able to respond to potentially large lawsuits, then it ought to be allowed to proceed. For it is likely that when the actors in the economy are operating under rules that unambiguously assign responsibility (subject to the incentives and constraints of possible loss of markets, potential liability, and insurance oversight), simply letting those "beady eyes and brains" loose will result in a better balance between the public's need for innovation and its competing need for safety, than the practice of boundless "prudence" that has taken form in our current laws and regulatory customs.

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Chemical and Nuclear Waste Disposal: Problems and Solutions

James P. Murray, Joseph J. Harrington, and Richard Wilson

I. Introduction

The problems of waste disposal have always been with us. In biblical times, the residents of Jerusalem always burnt their wastes in the hideous Vale of Gehenna. This gave way to burial of waste or sometimes dumping it in shallow oceans. All too often the sewage pipes of the seaside towns did not even take the waste to the low tide mark; and the use of the deep oceans as a disposal site has been almost unknown.

As time has progressed, not only has the number of people increased but the amount of waste per person has increased as well. This has led in the last 10 years to a greater public concern over waste disposal

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The authors wish to acknowledge financial assistance from the Andrew W. Mellon Foundation; Environmental Protection Agency Grant CR807809-01-1 to the Interdisciplinary Programs in Health, Harvard School of Public Health; a gift from the Dow Chemical Company; and contracts from the Nuclear Regulatory Commission and the Department of Energy (Grant DE-AC02-80ER10621).

The authors also wish to thank the EPA Library in Boston for literature assistance, and D. Bodansky, B. L. Cohen, D. Costle, E. Crouch, D. Curtis, D. Hornig, S. Plehn, W. Torrey, and many others for helpful communications. Diane Rolinski and especially Mary Henderson provided valuable assistance in preparing the manuscript. An expanded version of this paper is available on request.

Although the research described in this article has been funded in part by the federal grants mentioned above, it has not been subjected to the respective agencies' peer and administrative review, may not reflect the views of the agencies, and no official endorsement should be inferred.

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problems. But only now is there a willingness to understand and calculate numerically the deleterious health effects, and to be conservative in hazard estimation in the face of uncertainty. As we examine the problems, we note two important changes of perception in the last 100 years.

A hundred years ago it was believed that there was some threshold for harm in exposure to any toxic chemical, and therefore if that chemical were adequately diluted, the potential for harm would disappear. This view faced its first challenge in the 1920s when there was a search for the threshold of exposure to x-rays below which no one would get cancer. No one was able to establish such a threshold. In 1928 the International Commission on Radiological Protection began its work; this commission believes it is prudent to assume that no threshold exists and espouses a proportional dose-response relationship for prudent public policy purposes. Once this has been accepted for radiation-induced carcinogenesis, it is a short logical step to assume that a proportional dose-response relationship might hold as well for chemically induced carcinogenesis. If we assume that a proportional dose-response relationship *might* exist for some hazards we can no longer assume that waste problems are solved by dilution.

Another important issue is our new willingness to calculate and address the health problems we create for subsequent generations. It used to be acceptable to dispose of waste products using methods sufficiently secure that the products would not be exposed to our environment for perhaps 100 years. Now we are beginning to ask, what will happen after the 100 years?

It is the *simultaneous* change of both of these criteria that has changed our perception of the waste issue and has made solutions to the problem complex. The changes are recent enough that no general solution for estimating risk has been propounded; worse still, not only do we not know the solution, the problems have not been well formulated and we have not asked all the relevant questions. In this paper, we outline what we consider to be a reasonable first approach to determining what the problems of hazardous chemical and nuclear waste disposal are and give some tentative answers to some of the relevant questions.

We emphasize that our definition of the problems need not prejudice the solutions. Various moral and ethical considerations, which we as analysts may perceive differently from a decision-maker, will significantly influence decisions. By outlining the problems and issues, and by making comparisons, we hope that expenditures of societal,

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fiscal, and emotional capital on these problems will achieve the best possible results.

We have found it most instructive to compare hazardous chemical waste disposal problems with the problems of nuclear waste disposal. In section II, we outline and compare the compositions and volumes of hazardous chemical wastes with hazardous nuclear wastes. In section III, we briefly address the current procedures for treating hazardous chemical and nuclear wastes: landfilling; incineration; chemical, biological, and physical treatments; deep-well injection; mined geologic disposal; subseabed disposal; or even abandonment. In section IV, we discuss the fate and persistence of the components of hazardous chemical and nuclear wastes after their disposal. We also summarize the implications of Love Canal—a leaking chemical waste dump near Niagara Falls, N.Y., and of Oklo—a buried natural nuclear reactor in Gabon, West Africa.

In section V, we discuss the problems in estimating risk and present several examples of risk calculations applied to different types of hazardous waste. In section VI, we conclude by summarizing our comparison of hazardous chemical and nuclear waste disposal.

The final aim of the analysis is to combine all this information into a risk assessment—a quantitative assessment of the risk to life and to the environment—and to present it to the decision-maker, politician, environmentalist, or homemaker for their decisions. This has been attempted for nuclear waste, and indications are that the risk could be very small, given proper disposal. Attempts to calculate risk for chemical waste have barely begun.

II. Compositions and Volumes of Wastes

Composition of Hazardous Chemical and Nuclear Waste

One of the difficulties in comparing hazardous chemical and nuclear wastes is knowing what they are. Section 3001, Subtitle C, of the Resource Conservation and Recovery Act of 1976 (RCRA), directs appropriate federal and state agencies to "develop and promulgate criteria for identifying the characteristics of hazardous [chemical] wastes, which should be subject to the provisions of this subtitle, taking into account toxicity [including carcinogenicity], persistence, and degradability in nature, potential for accumulation in tissue and other related factors such as flammability, corrosiveness and other hazardous characteristics."[1] EPA has diligently addressed this issue

[1]42 USC 6921, Public Law 94-580, October 21, 1976.

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but even so, characterization of the waste is complex and can be quite confusing.

The large number of chemical substances that may be hazardous brings to light some tremendous problems. For example, the National Institute of Occupational Safety and Health (NIOSH) estimates that 86,000 unique chemical products were manufactured by 10,000 companies during the years 1972 to 1974.[2] When one considers the number of elemental compositions or molecular rearrangements possible, the numbers become phenomenally large. The fraction of the chemicals that are now considered hazardous is somewhere around one percent of those in the NIOSH list. This would be approximately 1,000 chemicals, although EPA lists do not yet contain quite this many.[3]

In addition to the hazardous chemical wastes produced by manufacturing and non-manufacturing industries, mining wastes, domestic wastes, oil industry spills, and coal mining and burning wastes also have toxic, hazardous components. A good example is coal.

Coal burning in power plants and processes under design for liquid fuel and gas production produce gaseous emissions such as carbon, sulfur and nitrogen oxides, polycyclic aromatic hydrocarbons, and other toxic substances (arsenic, cadmium, fluoride, mercury, molybdenum, antimony, selenium), as well as radionuclides.[4] Of particular importance is the fact that the radionuclide population doses associated with modern coal-fired power plants appear to be greater than those associated with nuclear power plants having comparable power-generating capacity.[5]

[2]NIOSH, *National Occupational Health Survey*, vol. 2 (Washington, D.C.: U.S. Government Printing Office, 1977), p. 21.

[3]45 Federal Register 98, May 19, 1980, p. 33063; 45 Fed. Reg. 138, July 16, 1980, p. 47833; 45 Fed. Reg. 220, November 12, 1980, p. 74884; and 45 Fed. Reg. 229, November 25, 1980, p. 78524.

[4]National Academy of Sciences Committee on Accessory Elements, *Redistribution of Accessory Elements in Mining and Mineral Processing, Part I, Coal and Oil Shale*, 1979.

[5]Estimated emissions from a 1,000 MW_e (megawatts of energy per year) coal-fired power plant with only one percent of the introduced radionuclides released from the stack are: uranium-238 (8×10^{-3}); uranium-235 chain (3.5×10^{-4}); thorium-232 chain (5×10^{-3}); radon-220 (0.4); and radon-222 (0.8) Curies per year. Cf. J. P. McBride, R. E. Moore, J. P. Witherspoon, and R. E. Blanco, "Radiologic Impact of Coal and Nuclear Power Plants," *Science* 202 (1978):1045.

The weights of the uranium and thorium releases alone are 23.2 kilograms and 46.4 kilograms respectively. Expected health effects from these polluting stack emissions have been discussed earlier. (See R. Wilson, S. D. Colome, J. D. Spengler, and D. G.

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Nuclear wastes are an important part of the overall waste disposal problem. Like hazardous chemical wastes, we will limit our discussion to the risks imposed by civilian wastes. Nuclear power plants produce the greatest amounts of civilian high-level radioactive wastes, measured in Curies (Ci) per year. The reactors in use today are principally light water reactors (LWR), either boiling water reactors (BWR) or pressure water reactors (PWR). A high temperature gas-cooled reactor is also being operated at Fort St. Vrain, Colorado.

The Department of Energy has been mandated by law to conduct research on the safe disposal of nuclear wastes and ultimately to provide for their actual disposal in certain cases. The Nuclear Regulatory Commission, meanwhile, has primary responsibility for waste disposal licensing and must decide whether nuclear facilities have the technology to ensure adequate waste disposal.[6]

Nuclear wastes are divided into three categories: high-level wastes (HLW), transuranic wastes (TRU), and low-level wastes (LLW). High-level, commercial nuclear wastes are, for the most part, spent fuel rods from LWR reactors and some fuel processing waste. These fuel rods plus adjacent radiation targets, mostly stainless steel fuel rod encasements and moderating fluids, contain over 99 percent of the radionuclides produced during reactor operation.[7] Fuel rods are currently in wet-pool storage until permanent waste disposal facilities become available.

Transuranic waste is an assemblage of industrial cleanup waste, etc., that is only moderately contaminated with transuranic radionuclides that decay by alpha-particle emission, except for plutonium -238 and plutonium -241, which are considered to be particularly dangerous (fissile). The waste is specified to have greater than 10 nCi (nanocuries) per gram of alpha activity to classify it as a TRU waste.

Low-level wastes include almost any material contaminated by low levels of radionuclides. They are specified to contain less than 10 nCi of actinides per gram. This type of waste is generated by

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Wilson, *Health Effects of Fossil Fuel Burning – Assessment and Mitigation* (Cambridge: Ballinger Publishing Co., 1980). What should be asked, however, is what happens to the other 99 percent?

[6]DOE-NRC, *In the Matter of Proposed Rulemaking on the Storage and Disposal of Nuclear Waste (Waste Confidence Rulemaking) PR-50, 51 (44FR61372) Statement of Position of the United States Department of Energy*, DOE/NE-0007, April 15, 1980.

[7]Oak Ridge National Laboratory-DOE, *Spent Fuel and Waste, Inventories and Projections*, ORO-778, August 1980.

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hospitals, government and private research organizations, university laboratories, and commercial nuclear energy operations.

The principal isotopes generated by radioactive decay or activation in reactors and that could represent a serious hazard are: tritium, carbon-14, strontium-90, technetium-99, iodine-129, cesium-135, cesium-137, samarium-151 (?), lead-210, polonium-210, radon-222, radium-226, thorium-229, protactinium-231, uranium-232-238 (?), neptunium-237, plutonium-238-241, americium-241, 243, and curium-244. (The ? indicates that the seriousness of the hazard is debatable.) Uranium mining wastes also appear to pose a significant hazard. For example, in Grand Junction, Colorado, radon-222 gas has diffused from mine tailings that were used in the construction of development housing.[8]

Quantities of Waste Produced

In addition to specification of what types of waste are considered hazardous from a chemical-biological point of view, volumes of the types of waste generated are important because of the volume dependence of total possible ecological or human risk, and the volume dependence of cost for treatment and disposal.

Several research groups have done an extensive amount of work in estimating the total amounts of hazardous chemical waste generated by manufacturing and non-manufacturing industries.[9] EPA's most recent estimate of 1979 "volumes" (weights) is about 60,000 TMT (thousand metric tonnes).[10] For mining wastes, excluding uranium mining waste, somewhere between 442,000 and 1,320,000 TMT

[8]DOE, *Annual Status Report on the Uranium Mill Tailings*, Remedial Action Program, DOE/NE-0011, December 1980.

[9]Hugh J. Van Noordwyk, "Quantification of Municipal Disposal Methods for Industrially Generated Hazardous Wastes" in David Shultz, ed., *Treatment of Hazardous Waste, Proceedings of the Sixth Annual Research Symposium*, EPA 600/9-80-11, 1980, p. 8; EPA Office of Solid Waste, *RCRA Background Document 1951.3B, Chapter VI, Hazardous Waste Generation, Transportation and Disposal*, 1980, p. 1; D. A. Sharp, et al., Office of Solid Waste, Hazardous Waste Division, *Final Report on Cost of Compliance with Hazardous Waste Management Regulations to U.S. Environmental Protection Agency*, Contract 68-01-4360, Battelle Columbus Laboratories, 1978; Booz-Allen and Hamilton, Inc. and Putnam, Hayes and Bartlett, Inc., *Hazardous Waste Generation and Commercial Hazardous Waste Management Capacity – An Assessment*, SW-894, EPA Office of Water and Waste Management, December 1980; EPA, *State Decision Maker's Guide for Hazardous Waste Management*, SW-612, 1977; S. W. Plehn, Office of Solid Waste, EPA, *Final Environmental Impact Statement, Part 1, for Subtitle C, RCRA of 1976*; and M. Ghasemi, et al., TRW Environmental Engineering Division, *Technical Environmental Impacts of Various Approaches for Regulating Hazardous Waste Generators*, vol. 1, prepared for EPA, Office of Solid Waste, 1979.

[10]45 Fed. Reg. 98, p. 33063.

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of hazardous chemical waste was estimated to be generated in 1975.[11] Other chemical wastes, such as 84,000 TMT of coal ash, 13,000 TMT of cement kiln dust, and materials such as oil tanker spills, brines, drilling muds, the hazardous fraction of domestic household wastes, and an estimated "volume" of one percent of domestic sewage add up to a "maximum-value estimate" of about 400,000 TMT.[12]

Approximately 760,000 generators of manufacturing and non-manufacturing hazardous chemical wastes exist in the United States. About 73.9 percent of these produce less than or equal to 100 kilograms per month and about 91.2 percent produce less than or equal to 1,000 kilograms per month. In terms of the total amounts of waste generated, however, all those that produce less than or equal to 100 kilograms per month generate only about 0.23 percent of the waste; and all those that generate less than or equal to 1,000 kilograms per month generate only about 1.05 percent of the waste.[13] This type of information is what encouraged the EPA to limit regulations to producers of less than or equal to 1,000 kilograms per month. Nonetheless, additional complexities exist in regulation as well.[14]

Nuclear wastes are different. "Volumes" of high-level wastes produced in 1980 were 1.58 TMT of spent fuel rods and 0.45 TMT of nuclear fuel services waste. "Volumes" of transuranic waste were about 1.5 TMT. "Volumes" of low-level wastes are about 49 TMT for fuel cycle wastes and 44 TMT for non-fuel cycle wastes.[15] Uranium mining waste totaled 7,010 TMT for tailings and 142,000 TMT for overburden. "Volumes" for high-to-low-level wastes are calculated from actual data and estimated densities: 10 grams per cubic centimeter for fuel rods and 1 gram per cubic centimeter for others

[11]PEDCo. Environmental, Inc., *Study of Adverse Effects of Solid Wastes from all Mining Activities on the Environment,* draft for EPA, 1979.

[12]S. Rhodes, *Cost and Quality of Fuels for Electric Utility Plants – 1979,* FPC-423, DOE/EIA-0191(79), VC-97, June 1980; PEDCo, Environmental, Inc., *Adverse Effects;* Council on Environmental Quality, *The Eleventh Annual Report of the Council on Environmental Quality,* 1980; COMRATE, *Mineral Resources and the Environment, Supplementary Report: Resource Recovery from Municipal Solid Wastes,* 1975; EPA, *Fourth Report to Congress, Resource Recovery and Waste Reduction,* SW-600, 1977; and Council on Environmental Quality, et al., *The Global 2000 Report to the President,* vol. 1, 1980.

[13]M. Ghasemi, et al., *Technical Approaches.*

[14]45 Fed. Reg. 98, p. 33063.

[15]DOE, *Spent Fuel and Waste Inventories and Projections,* ORO-778, UC-70, August 1980. Also personal communication with Dr. K. J. Notz, ORNL; DOE, *Nuclear Waste Management Program Summary Document,* FY 1981, DOE/NE-0008, UC-70, March 1980; and DOE, *Spent Fuel Storage Requirements, An Update of DOE/NE-0002,* DOE/SR-0007, UC-85, March 1981.

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(aqueous). Volumes for mining wastes are calculated with published weight data and a density of 1.55 grams per cubic centimeter.

There have been 69 commercial nuclear reactors operating at some time between 1960 and 1980 that generate all levels of nuclear waste.[16] Fred C. Hart Associates, Inc. has estimated that 7,200 hospitals, 3,200 medical laboratories, and 5,700 research facilities produce hazardous wastes.[17] It is likely that a significant fraction of these facilities produce LLW wastes in small amounts. Twenty-five uranium tailings piles also exist.[18]

Actual volumes of hazardous chemical and nuclear wastes are compared in Figure 1. All the cubes to the left of the uranium mining cube represent the total volume estimate of hazardous chemical waste. The question marks at the center of some of the cubes imply that the lower bounds cannot be accurately estimated. It is immediately apparent that the *volumes of hazardous chemical wastes are enormous compared to nuclear wastes.* Moreover, if we ignore the problems associated with mining wastes—these wastes are essentially geometric natural earth rearrangements and can be considered minor hazards—the difference between hazardous chemical and nuclear wastes becomes a several orders of magnitude difference. Hazardous nuclear waste would then be represented by the tiny cubes in the lower right-hand corner of Figure 1 (representing high-level, low-level, and transuranic wastes). Finally, it is interesting to note that if we were to expand the nuclear waste volumes (including uranium mining) by a factor of 10, the size of the cube edges would only increase by a factor of 2.15. The obvious volume differences between the amounts of hazardous chemical and nuclear wastes generated would still exist.

In addition, since there are a much larger number of hazardous chemical waste generators in operation compared to nuclear waste generators, this implies that hazardous chemical waste management should be considerably more difficult than nuclear waste management.

III. Treatment and Waste Disposal

Hazardous Chemical Waste

Some of the main treatment processes that are currently in use for hazardous chemical waste are presented in Figure 2. They have been

[16]DOE, *Spent Fuel Storage Requirements.*
[17]S. W. Plehn, *Final Environmental Impact.*
[18]DOE, *Management Summary.*

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FIGURE 1
ANNUAL VOLUME COMPARISON: HAZARDOUS CHEMICAL VS. NUCLEAR WASTE

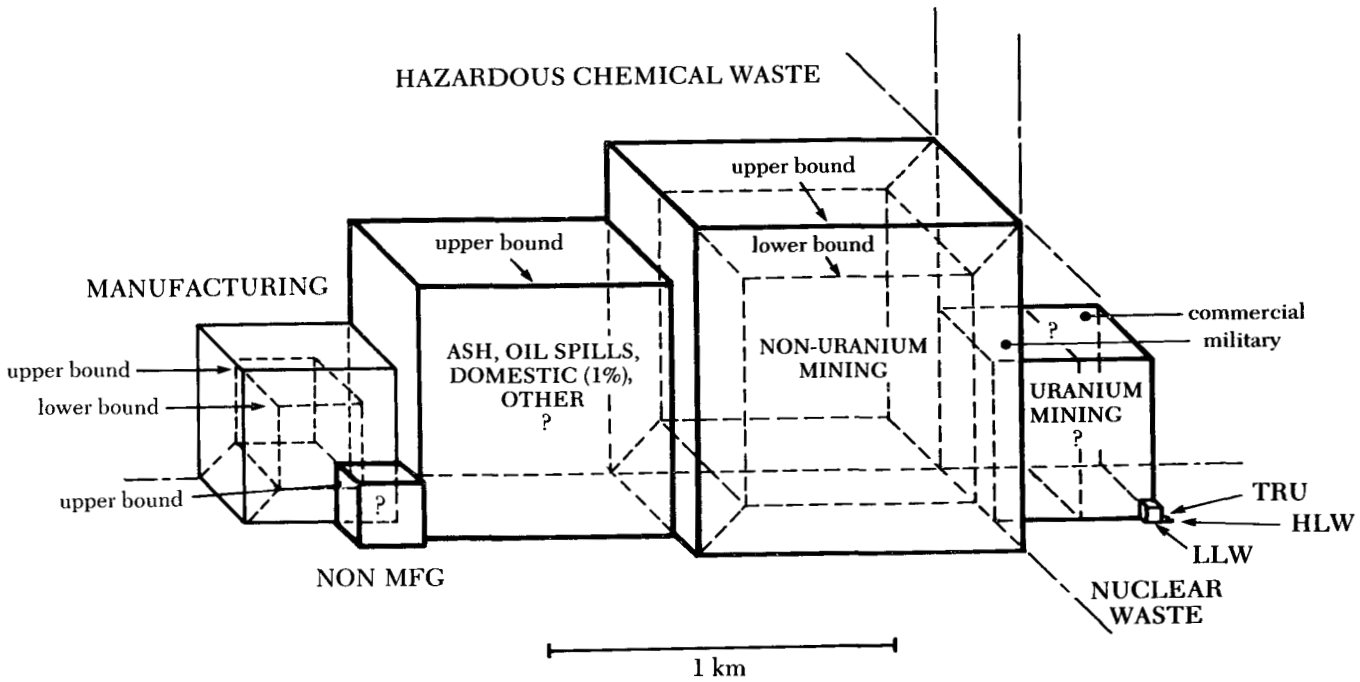

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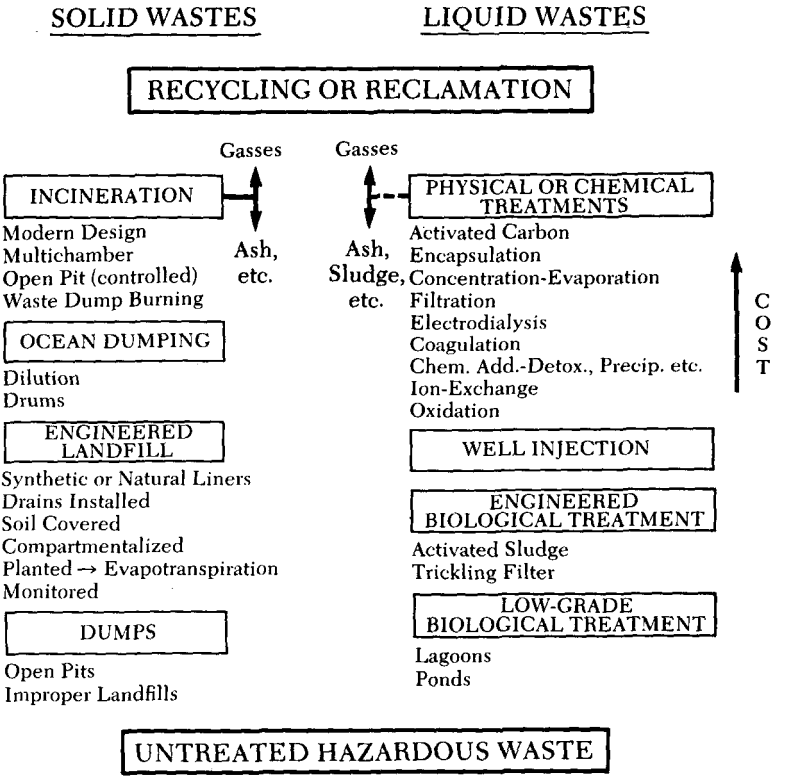
FIGURE 2
PRINCIPAL PROCESSES AVAILABLE FOR HAZARDOUS CHEMICAL WASTE TREATMENT



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arranged from the bottom to the top of the page to correspond generally with trends of increasing cost. In terms of the estimated "volumes" of hazardous wastes treated or disposed of by commercial offsite facilities alone, Booz-Allen et al. estimate that: 36 percent are treated by "secure landfill"; 30 percent by "chemical, biological and physical treatment"; 11 percent by "deep well injection"; 8 percent by "land treatment/solar evaporation"; 6 percent by "incinerator"; 6 percent by "resource recovery"; and 3 percent by "secure landfill for chemical treatment wastes."[19] These percentages reflect only the amounts of waste treated by these commercial facilities, however, and do not accurately characterize the distribution of total amounts produced. A lot of hazardous materials are just abandoned at open dumps, scattered along the roadside, or released into open waterways. For many of the wastes, the highest-priced process is to convert them into usable products by recycling or reclamation. These processes could involve comminution, magnetic or density separations, and many other elaborate stages linked in various sequences. The least expensive waste process, but perhaps the most hazardous methodology, could be just to abandon it.

Many other processes have been designed, and their costs would undoubtedly fall between these two extremes.[20] An EPA list of "handling codes for treatment, storage and disposal methods" is presented in Table 1. Some of these intermediate processes can reduce concentrations of these toxic materials to fairly low levels, and others can stabilize/solidify acutely hazardous materials by using bentonite-cement mixtures or silicate matrices. Recently, a detoxification process using molten sodium metal reactions has been developed.

Some problems exist with some of the central methods used for hazardous waste, including incineration and landfill disposal. Incineration of different pollutants definitely reduces the volume of waste originally generated, but can also produce gas or liquid phase pollutants, ash and particulates, and quenched ash pile leachates. These could be quite toxic, but this would certainly depend on the type of

[19]Booz-Allen and Hamilton, Inc. and Putnam, Hayes and Bartlett, Inc., *Hazardous Waste Generation and Commercial Hazardous Waste Management Capacity – An Assessment*, SW-894, prepared for EPA Office of Water and Waste Management, December 1980.

[20]For a discussion of these processes, see 45 Fed. Reg. 98, p. 33063; N. P. Cheremisinoff, P. N. Cheremisinoff, F. Ellerbusch, and A. J. Perna, *Industrial and Hazardous Waste Impoundment* (Ann Arbor, Mich.: Ann Arbor Science Pub., 1979); D. Shultz, "Disposal of Hazardous Waste," Proceedings 6th Ann. Res. Symp., EPA 600/9-80-010, 1980; and R. B. Pojasek, *Toxic and Hazardous Waste Disposal, Processes for Stabilization/Solidification*, vol. 1 (Ann Arbor, Mich.: Ann Arbor Science Pub., 1979).

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TABLE 1

EPA HANDLING CODES FOR TREATMENT, STORAGE AND DISPOSAL METHODS

1. Storage
   - S01 Container (barrel, drum, etc.)
   - S02 Tank
   - S03 Waste pile
   - S04 Surface impoundment
   - S05 Other (specify)
2. Treatment
   - (a) Thermal Treatment
   - T06 Liquid injection incinerator
   - T07 Rotary kiln incinerator
   - T08 Fluidized bed incinerator
   - T09 Multiple hearth incinerator
   - T10 Infrared furnace incinerator
   - T11 Molten salt destructor
   - T12 Pyrolysis
   - T13 Wet Air oxidation
   - T14 Calcination
   - T15 Microwave discharge
   - T16 Cement kiln
   - T17 Lime kiln
   - T18 Other (specify)
   - (b) Chemical Treatment
   - T19 Absorption mound
   - T20 Absorption field
   - T21 Chemical fixation
   - T22 Chemical oxidation
   - T23 Chemical precipitation
   - T24 Chemical reduction
   - T25 Chlorination
   - T26 Chlorinolysis
   - T27 Cyanide destruction
   - T28 Degradation
   - T29 Detoxification
   - T30 Ion exchange
   - T31 Neutralization
   - T32 Ozonation
   - T33 Photolysis
   - T34 Other (specify)
   - (c) Physical Treatment
   - (1) Separation of Components
   - T35 Centrifugation
   - T36 Clarification
   - T37 Coagulation
   - T38 Decanting
   - T39 Encapsulation
   - T40 Filtration
   - T41 Flocculation
   - T42 Flotation
   - T43 Foaming
   - T44 Sedimentation
   - T45 Thickening
   - T46 Ultrafiltration
   - T47 Other (specify)
   - (2) Removal of Specific Components
   - T48 Absorption-molecular sieve
   - T49 Activated carbon
   - T50 Blending
   - T51 Catalysis
   - T52 Crystallization
   - T53 Dialysis
   - T54 Distillation
   - T55 Electrodialysis
   - T56 Electrolysis
   - T57 Evaporation
   - T58 High gradient magnetic separation
   - T59 Leaching
   - T60 Liquid ion exchange
   - T61 Liquid-liquid extraction
   - T62 Reverse osmosis
   - T63 Solvent recovery
   - T64 Stripping
   - T65 Sand filter

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TABLE 1 (cont.)

EPA HANDLING CODES FOR TREATMENT, STORAGE AND DISPOSAL METHODS

T66	Other (specify)	T77	Other (specify)
(d)	Biological Treatment	T78	[Reserved]
T67	Activated sludge	–79	
T68	Aerobic lagoon		
T69	Aerobic tank	3. Disposal	
T70	Anaerobic lagoon	D80	Underground injection
T71	Composting	D81	Landfill
T72	Septic tank	D82	Land treatment
T73	Spray irrigation	D83	Ocean disposal
T74	Thickening filter	D84	Surface impoundment (to be closed as a landfill)
T75	Tricking filter		
T76	Waste stabilization pond	D85	Other (specify)

waste burned and the process by which it was incinerated. For example, consider the case of polychlorinated biphenyls. Thermal decomposition at normal incineration temperatures (650°C to 850°C) produces tetra-, penta- and hexachlorobenzenes,[21] which are all definitely toxic substances.[22] Hexachlorobenzene was found to be carcinogenic in Syrian Golden hamsters.[23] In addition, TCDD, which is known to be highly toxic and also carcinogenic, is produced in some types of incinerators as well.

Toxic metals can be released by incineration as well. For example, in an experiment where domestic sewage sludge was pyrolyzed at 450°C and then incinerated, 20 percent of the cadmium and 25 percent of the lead originally present was lost to the "gas" phase of both stages.[24] At 800°C pyrolysis, 80 percent of the cadmium and 50 percent of the lead were released. In addition, about 1.4 liters of nitrogen oxides were produced per kilogram of dry sludge. Several industries

[21]Cf. S. Budiansky and J. Josephson, "Waste Disposal Chemistry," *Environmental Science Technology* 14, no. 5 (1980):508.

[22]H. E. Christensen, et al., *Registry of Toxic Effects of Chemical Substances*, HEW, June 1976.

[23]Safe Drinking Water Committee, *Drinking Water and Health*, vol. 3 (Washington, D.C.: National Academy of Sciences Press, 1980).

[24]N. Takeda and H. Masakatusu, "Combined Process of Pyrolysis and Combustion for Sludge Disposal," *Environmental Science and Technology* 10, no. 12, (1976):1147.

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have claimed that they have new methods of incineration that will meet the EPA's incinerator performance standards of greater than or equal to 99.99 percent destruction and removal of hazardous substances.[25] We hope they can.

The highest percentage of hazardous wastes generated and treated now are disposed of in landfills. It has been estimated that in 1980 75,700 industrial landfills were currently in operation. In addition, 50,644 active or inactive sites are estimated to possibly contain "potentially dangerous amounts of hazardous wastes."[26] Another study indicates 35 percent of 8,163 investigated landfill sites contain hazardous materials, 70 percent have "no lining," and 95 percent "have no groundwater monitoring system to detect toxic contamination." An additional study of 50 industrial landfills in 1977 indicated that about 80 percent of the landfills carrying specific types of hazardous chemicals were releasing a small fraction of these materials into the ground. A 1978 EPA study of municipal landfills identified 14,000 active sites, but only 35 percent were "in compliance with state regulations."[27]

Amounts of landfill leachates generated depend mostly on what types of wastes are buried, the weather conditions, and landfill designs. Areas that have high precipitation and low amounts of evapotranspiration favor landfills to produce relatively large quantities of leachate.

The vulnerability of current landfills to rainfall has recently become quite apparent, and this can be enhanced by construction failures. Landfills appear to be subject to decomposition-oriented differential pressure development and improper slope gradients constructed at the side of a landfill. This leads to the formation of cracks at the surface up to 0.5m wide, a very ready uptake of precipitation, followed by large-scale production of landfill leachates.[28]

At least some degree of care should be taken with the construction of hazardous waste landfills, which are increasing in number rapidly. If at all possible, geologic formations such as limestone terrain should be avoided because fractured rock and karst flow systems are so easy to pollute. Thick shales or clay mineral deposits should be highly favored because of very low groundwater permeabilities and high

[25]46 Fed. Reg. 15, January 23, 1981, p. 7666.

[26]Council on Environmental Quality, *Eleventh Annual Report.*

[27]Ibid.

[28]Cf. J. P. Murray, et al., "Groundwater Contamination by Sanitary Landfill Leachate and Domestic Wastewater in Carbonate Terrain: Principal Source Diagnosis, Chemical Transport Characteristics and Design Implications," *Water Resources* 15 (1981):745.

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adsorptive capacities. Landfill sites should be excavated in such a way that their containment space does not intercept saturated groundwater flow systems.

Many supposedly better landfills are currently advertised by various manufacturing industries. A pipe system to collect spill installed below the landfill might help, but can hardly be expected to collect all the fluid from leaks in a geometrically complex garbage dump. Monitoring and filling surface cracks as well as coverage under the top of the landfill with plastic liners and gas-release systems markedly reduce the amounts of leachate produced. Gas-release systems might be used for methane recovery and use. Coverage of the "bottom" would not do much. Precipitation could continuously collect in the lined landfill until it would resemble a bathtub, and leachate would begin to pour out of the lowest "leaks" in the liner.[29]

A dilemma is bound to arise, even if the "best" landfill procedures begin to be installed. How much land and how much of the eventually usable fraction of the solid waste that we are burying should we be willing to discard? All the resources ending up in landfills would be exceptionally difficult to recover, as natural sources of these various materials become increasingly scarce. At this stage, only two percent of hazardous wastes are being recycled.[30] In addition, even if a landfill passes the current EPA 30-year post-closure requirement, hazardous components such as toxic metals and many chlorinated organics would still be preserved for future release.

Some of the toxic components leaking out of landfills or "unlined" lagoons are beginning to contaminate water supplies. To some extent, therefore, they can affect the food chain of man via bioaccumulation and progressive ecosystem food-chain concentration. There could even be direct contact with released hazardous materials, which could lead to increased exposure and risk. EPA is becoming increasingly aware of this problem and has come out with a new list of hazardous landfill substances and a set of landfill owner regulations.[31] It has also come up with a new financial method for cleaning up severe hazardous waste disposal sites—Superfund—and lists of methods of how it could be used.[32] These chemicals exhibit some probability of increasing the risk of adverse, human-health effects such as cancer. It would depend on what chemicals were released

[29]47 Fed. Reg. 49, March 12, 1982, p. 10972.
[30]Council on Environmental Quality, *Eleventh Annual Report.*
[31]46 Fed. Reg. 24, February 5, 1981, p. 11126.
[32]47 Fed. Reg. 49, March 12, 1982, p. 10972.

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and how much a community might receive, however, before we could say anything about the magnitude of imposed risk.

Nuclear Waste

High-level wastes, mentioned before, principally consist of uranium oxide fuel pellets packed within zircalloy stainless steel tubes. These tubes are removed from reactor cores after burnout and placed in pools adjacent to reactor facilities. The pools are to keep fuel rods cool by self-generated thermal pumping and thermal conduction. Several different methods for final disposal of nuclear waste have been suggested. These include mined geologic disposal, subseabed disposal, very deep hole disposal, rock-melting disposal, island disposal, ice sheet disposal, deep well injection disposal, space disposal, waste partioning and transmutation, and chemical resynthesis.[33]

Mined geologic disposal is considered to be the most appropriate at this time. The generated waste can be reprocessed or buried *in toto*. If the reprocessing design for disposal of HLW becomes politically acceptable and is done, the waste can be processed with acid-base and other treatments to remove the uranium and plutonium for recycling. The residual collection of fission products and actinides can then be incorporated into glass or crystalline matrices and inserted into stainless steel or copper waste canisters. If not, fuel rods can be assembled into waste canisters with stabilizer material to effectively separate them and block neutron flux. The Swedes have considered lead as the optimum stabilizer for this case.[34] Canisters could be sequentially packed into several different containers at the same time to be protected against possible geochemical alterations leading to canister corrosion.

In deep-mined geologic sites, 500–1,000 meters below the surface, either type of canister would be packed in arrays, which would keep generated thermal profiles of the system within acceptable levels. The Swedes planned burial for 30-year-old (in storage) spent fuel rod canisters in rows 25 meters apart, with canisters placed at every 6 meters along the rows. This method of packaging has been calculated to generate thermal gradients leading to a maximum rock temperature of 60°C.[35] These zones would be picked based on tectonic stability, low groundwater permeability and political availability.

[33]DOE-NRC, *Storage and Disposal.*

[34]KBS, *Handling and Final Storage of Unreprocessed Spent Nuclear Fuel*, vol. 2 *Technical* (Stockholm: Karnbranslesakerhet, 1978).

[35]Ibid.

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Geologic environments such as tectonically stable salt domes, salt beds, granites, basalts, and tuffs have already been tentatively selected for burial, to start about the year 2000.[36] Immediately after replacement, they would be surrounded by adsorbent backfill packaging with such material as bentonite, zeolites, other clay minerals, etc., or various mixtures. Elaborate geochemical studies of how the backfill mixtures would respond to the low-grade thermal pulse after nuclear waste burial are currently being done at Sandia.[37]

After construction of the repository and disposal of the waste, shafts would be filled with materials such as bentonite-sand mixtures to allow for recovery, if required. HLW generated by nuclear fuel services would be vitrified, incorporated into canisters, and buried in a similar fashion.

Subseabed disposal of high-level wastes has also been considered.[38] This is due to the possibility that no state government may eventually accept repository construction for political reasons. On the other hand, international agreements might very well prevent subseabed disposal in the future. In either case, however, it could be useful to know whether or not other options are available. This would involve packaging the waste into chemically stable canisters and dropping them or inserting them in a random or planned array ~30m into bottom sediments on tectonically stable floors of the deep ocean.

Cohen has suggested that if we consider disposing of nuclear wastes in the deep oceans, the cancer risk is possibly greater than for disposal on land but it can be calculated with greater certainty, and the chance of catastrophe is negligible.[39] Following this thinking, we suggest a rule:

> If the expected lifetime of the waste exceeds the expected secure lifetime of the repository, it could be environmentally superior, and superior for public health, to dispose of the waste in the deep oceans rather than on land.

In the past, TRU—mostly contaminated laboratory or processing equipment—has been disposed of in landfills, usually at military sites along with LLW. In 1962, and shortly thereafter, six commercial burial sites were developed.[40] These sites are located at Barnwell,

[36]DOE-NRC, *Storage and Disposal.*

[37]Personal communication, J. L. Krumhansel, 1981.

[38]DOE-NRC, *Storage and Disposal.*

[39]Cf. B. L. Cohen, "Ocean Dumping of High Level Waste – An Acceptable Solution We Can Guarantee," *Nuclear Technology* 47 (1980):163.

[40]DOE, *Spent Fuel and Waste Inventories.*

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South Carolina; Beatty, Nevada; Hanford, Washington; Maxey Flats, Kentucky; Sheffield, Illinois; and West Valley, New York. Only the sites at Barnwell, Beatty, and Hanford (or Richland) remain open. The Barnwell site has never accepted TRU waste, only LLW. In the TRU waste buried at these sites, only 123.4 kg of transuranic elements have been included. After issuance of the AEC directive in 1970, TRU wastes have been placed in retrievable storage.[41] Current DOE plans involve their careful, deep geologic burial once a repository has been built. Technology such as incineration and electrodialysis is currently under consideration for preliminary volume reduction.

Low-level wastes are now disposed of in the three landfills mentioned above. These landfills are generally constructed by digging deep trenches and filling them with packaged LLW. Once filled, the trenches are covered with all the soil and geologic materials taken out.[42] These landfills are covered with a thicker layer than most hazardous chemical waste dumps, and their LLW volumes are much less degradable than domestic waste. In addition, these sites are continuously monitored. For these reasons, the landfills may very well generate less contaminated leachate than conventional hazardous chemical waste operations. This would be particularly valid in the case of the Beatty, Nevada, and Hanford, Washington, sites; two of the three are currently operating because of the relatively low rainfall and relatively high evaporation rates at their locations. Small quantities of the isotopes included in the waste may nonetheless be leached out, but hopefully not before most of them have undergone radioactive decay. Questions do remain, however, concerning how much will be released and where it will go. At least we know that leakage at Beatty will be confined by geologically isolated basins, and leakage at Hanford will be diluted by enormous volumes of the Columbia River and the Pacific Ocean after very slow migration through highly adsorbent tuff.

Uranium mining wastes are also a result of nuclear industry operations. The hazard associated with this type of waste is emission of the decay products radon-222 and thorium-230. Since radon-222 has a half-life of 3.823 days, only a thin covering of soil, perhaps only two feet thick, can effectively block release. These waste piles also need stabilization against wash-out erosion and probably long-term surveillance and maintenance. DOE has developed a remedial action

[41]Ibid., and DOE, *Program Summary Document*.
[42]DOE, *Program Summary Document*.

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program for uranium mining wastes and is interfacing with state agencies and NRC in this regard. It plans to complete this project by fiscal year 1985.[43]

IV. Fate and Persistence

One of the central issues in determining how much risk hazardous chemical and nuclear wastes might develop is the fate and persistence of their hazardous components after disposal. In other words, where do they go and how long do they stay? If we are trying to estimate the potential health effects imposed by a waste disposal facility, we must at least have a good estimate of the amount of chemicals or radionuclides that would eventually be available for exposure.

Predicting these amounts will require determination of the stability of each given substance involved and the tremendous assortment of physical mechanisms and chemical reactions involved, as well as how fast these processes operate. A list including a few of these processes important for hazardous wastes is presented in Table 2. Determination of these parameters for one compound under very simple reaction conditions would take a large amount of effort. In addition to these parameters, many other important biological processes are involved, such as metabolism, bioaccumulation, biodegradation, sulfate reduction, and photosynthetic sulfide oxidation.

A small amount of hazardous products or wastes are spilled in transportation accidents. This fits into the category of fate. In fiscal year 1979, 1,766 hazardous material incidents were reported to EPA regional offices. Between 38 percent and 55 percent of these were transportation accidents involving rail, truck, ship-barge, and aircraft industries.[44]

A number of mathematical models have been built, characterizing highly limited systems. These refer particularly to nuclear waste disposal and chemical transport considerations related to agricultural problems. Many of these have been presented in the soil science literature. Most of these models are based principally on numerical analysis of convective-dispersion equations with various chemical or biological reactions included as well as pedologic media adsorption characteristics. EPA has developed a microcosm-oriented model (EXAMS) that approaches some toxic waste questions with compart-

[43]Ibid.

[44]EPA, *Hazardous Materials Incidents Reported to U.S. EPA Regional Offices from October 1977 through September 1979*, January 1980.

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TABLE 2

A FEW OF THE BASIC PHYSICAL OR CHEMICAL PROCESSES IMPORTANT FOR THE FATE AND PERSISTENCE OF HAZARDOUS AND NUCLEAR WASTES

Physical Processes	Chemical Processes
Gravity	Reactions
Pressure	Phase transformations
Temperature	gas, liquid, solid
Atmospheric circulation	Temperature dependence
Streamflow	Reversible reactions
Groundwater flow	Irreversible reactions
unsaturated media	Inorganic reactions
saturated media	Organic reactions
porous media	Complex formation
fractured media	Oxidation, Reduction
Particle entrapment in flowing systems	Adsorption
	adsorption isotherms
Colloid stability	hydrophobic processes
double-layer interaction	hydrophyllic processes
Lifshitz-Van der Waals potentials	retardation factors
Dispersion	Thermodynamics of reactions
Diffusion	$\Delta G°$, $\Delta H°$, $S°$, C_p, etc.
Geophysical processes—Tectonic	K, ΔG_{rxn}, μ_i, γ_i, $[x_i]$, a_i, etc.
earthquakes	ΔG_{ads}, θ, etc.
faults	Aqueous condition measurements
volcanic activity	pH, Eh, pe
intrusive activity	Photoreactivity
Erosion	e.g., photooxidation
Solar light flux	Chemical kinetics
Radioactive decay	1st, 2nd, etc. order
	catalysis

mental analysis.[45] KBS has assembled three models sequentially—ORIGEN, GETOUT, and BIOPATH, which look at suspected health and ecosystem effects potentially resulting from their planned HLW disposal sites.[46] A different mathematical approach is used for each stage. Many possibly important types of chemical reactions such as irreversible adsorption components, new-phase precipitation, or recrystallization with phase inclusion of various hazardous compo-

[45]D. M. Cline, "EXAMS: an Exposure Analysis Modeling System," preliminary draft, EPA Environmental Research Laboratory, Athens, Ga., 1979.

[46]KBS, *Handling and Final Storage.*

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nents are hardly incorporated into these models. This leads to uncertainty. Substantially expanding and combining these types of models to include complex chemical reactions and statistical uncertainty—not just highly simplistic terms such as retardation factors—would be very helpful in assessing potential risks due to different methods and types of disposal. Although a careful study and complex mathematical description of all the possible important controlling chemical reactions with the earth have yet to be done, especially with hazardous wastes, we can begin to make preliminary assessments about the hazards of chemical and nuclear wastes by beginning to develop and expand computer predictions about expected risks for hazardous wastes.

One key issue between hazardous chemical waste and nuclear waste has to do with degradability and radioactive decay. *Metals such as arsenic, which are not radioactive, are essentially stable for the lifetime of this planet.* Some organics can be oxidized quite readily, especially when exposed to solar-light flux in the atmosphere. Others, such as chlorinated or hydrogenated aliphatic compounds and many polycyclic aromatic compounds, appear quite stable within buried, reducing environments. An excellent review is presented by M.A. Callahan, et al. concerning known fate and persistence of the 129 EPA Clean Water Act priority pollutants.[47]

Radionuclides, however, definitely decay. Some of them have short half-lives. In Figure 3 the total number of calculated cancer doses representative of one TMT (initial) of fuel rods is plotted against the years after removal from a reactor. The number of doses present within the uranium ore required to generate this much fuel is included as well. With unreprocessed spent fuel, we intersect the same number of doses estimated for the original uranium ore, about 1,000 years after spent fuel removal from the reactor. It progresses to about a factor of five fewer doses after that. The only increase in the hazard potential of spent fuel after 1,000 years might be due to radionuclide chemistry changes with respect to geologic media transport. This will be summarized briefly in relation to Oklo. It would be much more difficult to sum the potential hazardous organic chemical toxicities over time.

Rather than discuss the detailed environmental chemistry of all these toxic substances at this stage, in comparing hazardous chemical wastes with nuclear wastes we shall discuss two important events for which some measure of knowledge is available. The first is Love

[47]M. A. Callahan, et al., *Water Related Fate of 129 Priority Pollutants*, vol. 1, EPA-440/4-79-029a, 2, EPA-440/4-79-029b, December 1979.

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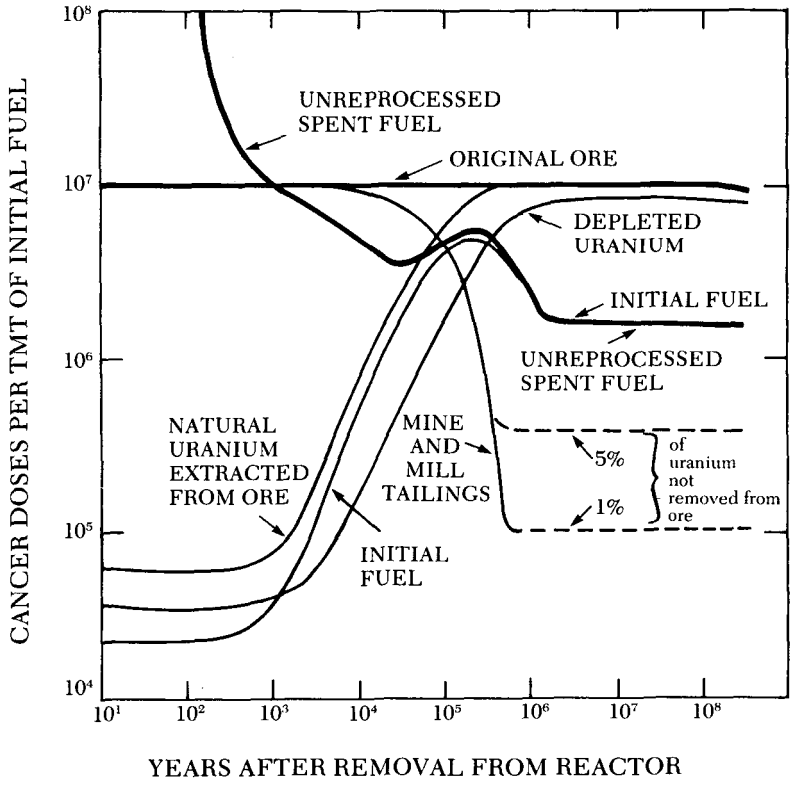
FIGURE 3
COMPARISON OF RADIOACTIVE HAZARD DECAY PROFILES OF URANIUM ORE AND PRODUCTS OF VARIOUS METHODS OF USAGE, INCLUDING SPENT REACTOR FUELS[48]



[48]This figure was originally drawn by E. A. Crouch, personal communication.

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Canal, Niagara Falls, New York and the second is the natural reactor at Oklo, Gabon, Africa.

Love Canal

Love Canal was originally built by William T. Love in the 1890s to feed a hydroelectric power-generating station, but digging was terminated shortly after construction began. A map is presented in Figure 4. Between 1942 and 1953, Hooker Electrochemical Company disposed of 21,800 tons of hazardous chemical wastes in this location.[49] A list of these has been put out by Hooker Chemical Company.

An elementary school, 99th Street School, was built on top of the landfill in 1954 and throughout the fifties and sixties, housing was developed around the site. Removal of a good portion of the landfill coverage could well have increased development of leachate and migration to buried stream beds in the area. By the mid-1960s this led to odors and visible pollution problems in the surrounding neighborhood. A list of the level of hazardous contaminants in the atmosphere, the groundwater, and the soil is presented in Table 3.[50] Most of these chemicals are known animal carcinogens. The carcinogenic potency for humans can be estimated by analogy,[51] but this has yet to be done with all of the data from Love Canal.

The population living in the region surrounding the canal at 97th and 99th Street that contains 99 houses (section I on map) was relocated between August 1978 to January 1979 by the New York State government, and the 99th Street School was closed. In February 1979 all the pregnant women and two-year-old children who lived in the region between 97th and 103rd Street, were asked to relocate. The evacuation section has been expanded to the area shown in section II down to Frontier Avenue. Significant numbers of houses in this area were still being purchased in 1981 and paid for by the federal government.

Careful epidemiologic investigations of possible health effects have been carried out by the New York State Department of Health and

[49]New York State Department of Health, *Love Canal, A Special Report to the Governor and Legislature*, April 1981; B. Paigen, "Love Canal – Lessons for Society," presentation to Banbury Conference, June 8–10, 1979; Interagency Task Force on Hazardous Waste, "Draft Report on Hazardous Waste Disposal in Erie and Niagara Counties," New York, March 1979; and personal communication, T. Gilles, Office of New York Attorney General Robert Abrams, 1982.

[50]New York State Department of Health, *Love Canal.*

[51]Cf. E. A. Crouch and R. Wilson, "Interspecies Comparison of Carcinogenic Potency," *Journal of Toxicology and Environmental Health* 5 (1979); also personal communication, 1981.

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FIGURE 4
LOVE CANAL

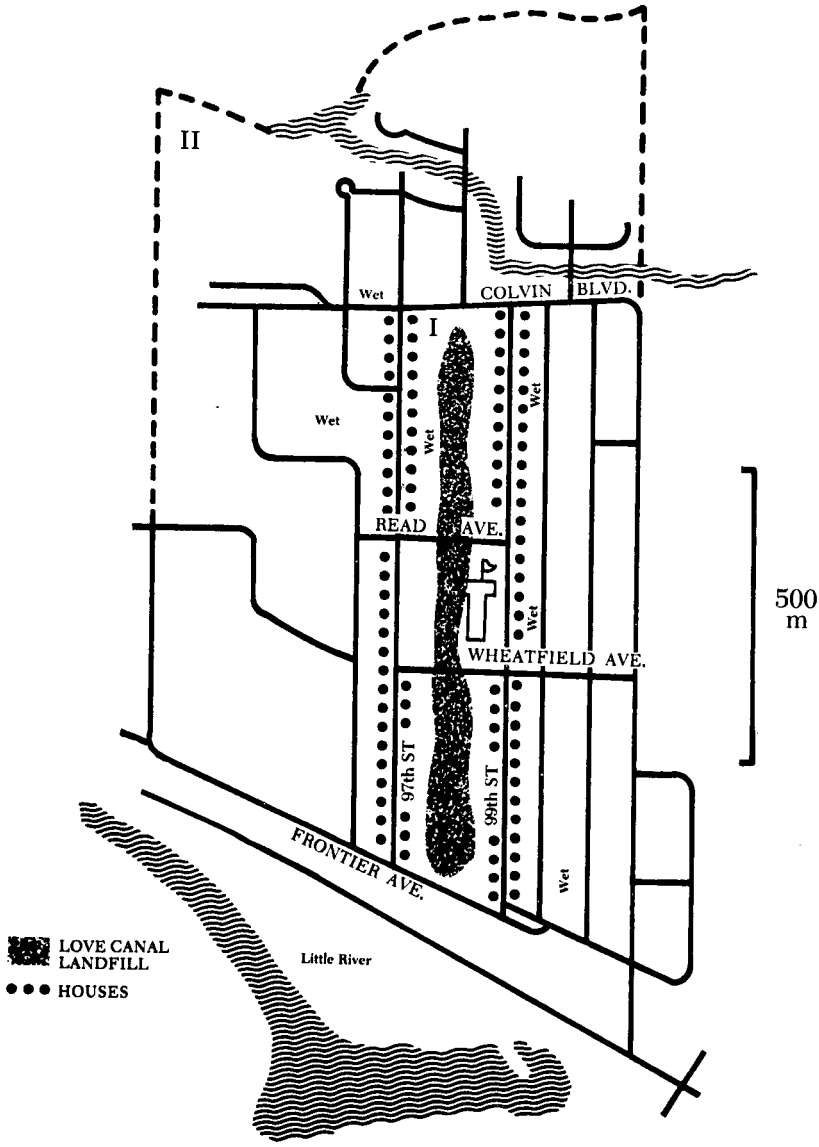

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TABLE 3

CHEMICALS FOUND AT LOVE CANAL

Chemical	Water and Leachate	Air	Soil and Sediment
Benzene	ID[a]	522.7 $\mu g\ m^{-3}$	< 0.1–0.8 $\mu g\ kg^{-1}$
α-Benzene hexachloride	3.2 $\mu g\ l^{-1}$	0.002–0.1 $\mu g\ m^{-3}$	ID
β-Benzene hexachloride	38 $\mu g\ l^{-1}$	3 $\mu g\ m^{-3}$	ID
δ-Benzene hexachloride	6.9 $\mu g\ l^{-1}$	0.4 $\mu g\ m^{-3}$	ID
γ-Benzene hexachloride (Lindane)	50 $\mu g\ l^{-1}$	ID	20 $mg\ gm^{-1}$
Carbon tetrachloride	ID	5.0 $\mu g\ m^{-3}$	
Chlorobenzene	10 $mg\ l^{-1}$	0.1–172 $\mu g\ m^{-3}$	0.4–2.9 $\mu g\ kg^{-1}$
Chloroform	0.2–3.9 $\mu g\ l^{-1}$	0.5–24.0 $\mu g\ m^{-3}$	0.2–2.3 $\mu g\ kg^{-1}$
Chlorotoluene	75 $mg\ l^{-1}$	0.008–7650 $\mu g\ m^{-3}$	ID
Dichlorobenzene	3 $mg\ l^{-1}$	< 0.3–100.5 $\mu g\ m^{-3}$	240 $\mu g\ kg^{-1}$
Dichloroethane	0.2–4.8 $\mu g\ l^{-1}$		< 0.4–2 $\mu g\ kg^{-1}$
Dichlorotoluene	95 $\mu g\ l^{-1}$	< 18–74 $\mu g\ m^{-3}$	
1,3-Hexachlorobutadiene		22–114 $\mu g\ m^{-3}$	
Pentachlorobenzene	2.5 $mg\ l^{-1}$	0.5 $mg\ m^{-3}$	58 $\mu g\ kg^{-1}$
Tetrachlorobenzene	5 $mg\ l^{-1}$	0.01–74 $\mu g\ m^{-3}$	11–100 $\mu g\ kg^{-1}$
Tetrachloroethylene	< 0.3–0.8 $\mu g\ l^{-1}$	< 0.2–52 $\mu g\ m^{-3}$	< 0.3 $\mu g\ kg^{-1}$
Tetrachlorotoluene	1 $mg\ l^{-1}$	< 0.01–0.97 $\mu g\ m^{-3}$	ID
Trichlorobenzene	52 $\mu g\ m^{-3}$	0.03–84 $\mu g\ m^{-3}$	34–64 $\mu g\ kg^{-1}$
Trichloroethylene	52 $mg\ l^{-3}$	73 $\mu g\ m^{-3}$	ID
Trichlorophenol	0.1–11.3 $\mu g\ l^{-1}$	ID	0.5–90 $\mu g\ kg^{-1}$

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TABLE 3 (cont.)

CHEMICALS FOUND AT LOVE CANAL

Chemical	Water and Leachate	Air	Soil and Sediment
Trichlorotoluene	34 mg l^{-1}	0.05–43.7 μg m^{-3}	ID
Toluene	250 mg l^{-1}	0.1–6.2 mg m^{-3}	< 0.1–104 μg kg^{-1}
Dioxin (TCDD)	1.4–5.1 ppt		< 2 ppt–312 ppt
1,2-Dichloroethylene	"0.1–0.1 μg l^{-1}"	334 μg m^{-3}	
PCB	0.64 mg l^{-1}		2–6 ppm
Methylene Chloride	< 0.3–0.3 μg l^{-1}	< 0.7–11.6 μg m^{-3}	
Bis (2-ethylhexyl) phthalate	8.1–24 μg l^{-1}		

SOURCE: These analyses are a summation of work carried out by the Toxicology Institute, Division of Laboratories and Research, New York State Department of Health and various laboratories of the U.S. Environmental Protection Agency and their subcontractors.

[a]ID—Identified but not quantitated.

NOTE:
μg = micrograms (10^{-6} grams),
mg = milligrams (10^{-3} grams),
l^{-1} = per liter,
ppt = parts per trillion, and
ppm = parts per million.

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personnel from Roswell Park Memorial Institute.[52] The following medical problems have been studied:

MEDICAL EXAMINATION TESTS	RESULTS—LOVE CANAL
1. Liver function	97th–99th St., slight (−) effects. Relocation showed a return to normal for most cases.
2. Anemia	Within expected limits.
3. Chloracne	No documented evidence.
4. Asthmatic, respiratory condition	No excessive incidence.
5. Cancer	No apparent excess.
6. Convulsive disorders	No excessive incidence.
7. Congenital defects	No significant excess for total Love Canal population. Two control groups: one in Canada and the other just north of Love Canal across Colvin Blvd. Possibly some excess for people living in wet areas where buried streambeds (swales) are located.
8. Low birth weights infant ≤2500 grams	Slight increase in low birth weights recorded on 99th Street and on wet areas.
9. Spontaneous abortions	*Significant increase for those living on 99th Street and in wet areas.* This was between 1959 (just after home building) and the early '70s. Spontaneous abortion rates in these areas reached a peak about three times higher than those living in dry areas at Love Canal in the early '60s.

[52]New York State Department of Health, *Love Canal.*

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The chromosomes of 36 Love Canal residents were examined by Biogenics Corp., of Houston, Texas, and 11 were judged to be "somewhat abnormal." Controls have not been taken, however, so these effects have been considered controversial.[53]

It is expected that cancer induced by chemicals will not be observable until 20 years after the exposure. The relation between lung cancer incidence and cigarette sales indicates this delay.[54]

It is likely that the individuals who have been evacuated from Love Canal will be asked to participate in epidemiologic data collection for a long time in order to provide data regarding cancer incidence with some degree of known environmental exposure rates.

We have attempted to gain some perspective on the actual risk paid by using the concentrations of various chemicals presented in table 3. To calculate the lifetime dose(d), we anticipate that no more than one percent of the water and leachate will have entered a drinking water supply or distribution system. Since man drinks about 2 liters per day, we assume that the maximum consumption is 0.02 liters of leachate per day. We also assume that the exposed population breathes this air all the time, i.e., 22 cubic meters per day per person. We therefore calculate a daily intake (α) in milligrams and divide by the body weight (70 kilograms) of an exposed individual. We assume further that cancer incidence is proportional to intake with the constant of proportionality the same as that in rats and mice. This is expressed as daily intake as a fraction of body weight. The carcinogenic potency (β) is then taken from human and animal data.[55] The product $d\beta$, if less than 1, is the expected lifetime cancer incidence, or risk (R), from an individual's lifetime exposure. We show this in Table 4.

We also assume that at low doses, deaths from toxic effects are less than those from cancer (animal data suggest this) and therefore that this number is an estimate of the total death rate from this cause. We note that two of the chemicals give lifetime risks close to 10^{-3}, or average annual risks close to 10^{-5}. These are in the region where notice must be taken, especially since other chemical exposure exists here as well.

However, none are in the region of lifetime risk of 1/10 or more. In a small sample of people exposed (500 or less), the total risk

[53]Ibid.

[54]Cf. J. Cairns, *Cancer: Science and Society* (San Francisco: W. H. Freeman and Co., 1978).

[55]E. A. Crouch and R. Wilson, "Interspecies Comparison."

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TABLE 4

RISK ESTIMATES FOR SOME OF THE COMPOUNDS IN TABLE 3.

Chemical	Potency β mg^{-1} kg day	Maximum[a] Lifetime Risk for Lifetime Exposure		
		^{R}air ($22m^3$ day^{-1})	^{R}water (0.02 ℓ day^{-1})	Total Risk from Data Avail.
Benzene[b,c]	1×10^{-3}	1.6×10^{-4}	—	1.6×10^{-4}
α-Benzene Hexachloride[d]	11.1	3.5×10^{-4}	1.0×10^{-5}	3.6×10^{-4}
β-Benzene Hexachloride[d]	1.84	1.7×10^{-3}	2.0×10^{-5}	1.7×10^{-3}
γ-Benzene Hexachloride–[Lindane][d]	1.33	—	1.9×10^{-5}	1.9×10^{-5}
Carbon Tetrachloride[b]	2.5×10^{-3}	3.9×10^{-6}	—	3.9×10^{-6}
Chloroform[b,c]	$<1 \times 10^{-3}$	$<7.5 \times 10^{-6}$	$<1.1 \times 10^{-9}$	$<7.5 \times 10^{-6}$
Dichloroethane[b]	3.3×10^{-3}	—	4.5×10^{-9}	4.5×10^{-9}
PCB[d]	4.34	—	7.9×10^{-4}	7.9×10^{-4}
Tetrachloroethylene[b]	1×10^{-3}	1.6×10^{-5}	2.3×10^{-10}	1.6×10^{-5}
Trichloroethylene[b]	4.5×10^{-3}	1.0×10^{-4}	6.7×10^{-5}	1.7×10^{-4}
TCDD	$\sim 10^{4}$	—	1.5×10^{-5}	1.5×10^{-5}
TOTAL		2.3×10^{-3}	9.2×10^{-4}	3.2×10^{-3}

[a]Maximum values of chemicals found were used.

[b]Potency taken from Crouch and Wilson.[56]

[c]Data from human exposure, the other potency data taken from animals—average of data compiled

[d]Potency taken from Voytek.[57]

[56]Ibid.

[57]P. E. Voytek, "Aspects of Risk Assessment Strategy," in *Assessment of Health Effects at Chemical Disposal Sites, Proceedings of Rockefeller University, N.Y. Symposium,* June 1–2, 1981, p. 155.

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computed may imply induction of about one case of cancer. With this data it is unlikely that significant increased cancer incidence will be found. Just recently, much higher levels of dioxin have been found at Love Canal. These are up to 17.2 ppm in basement sumps, 0.3 ppm in a creek bed or storm sewer, and about 0.03 ppm in soil (see T. Gilles, n.49). This indicates that the New York State Health Department's previous data, examined above, may have been far too low, and a significant increase in cancer rates may develop in the exposed population. In addition, exposure to several cancer-causing agents acting together may be worse than the effect of the sum of each separately—known as synergism.

A remedial construction plan was started in 1979 for collection and treatment of the landfill leachate as well as to try to block further leachate generation and contamination of the surrounding area. The federal government had spent over $21 million by the end of 1980. Suits against Hooker Chemical Company currently total somewhere between $12 *billion* and $14 *billion*.

The Oklo Natural Reactor and Implications Concerning Nuclear Waste Disposal

About 2.05 ± 0.03 billion years ago several zones which now exist in a French uranium mine at Oklo, Gabon in central west Africa went critical with respect to nuclear fission.[58] This involved water-moderated neutron flux in concentrated uraninite-pitchblend deposits, up to 70 percent uraninite, in zones which measured about 20 meters in diameter and 0.5 to 1.5 meters thick.[59] At this time these deposits had a natural uranium-235/uranium-238 ratio of 3.85 percent, since uranium-235 decays a little faster than uranium-238. This ratio is quite comparable to that used in current LWR reactor facilities.

Oklo is the only clearly demonstrated reactor known to have existed. It provides considerable information as to what we can expect with aged nuclear waste. Many of the site conditions favored leakage but very little of the hazardous radioactive nuclides appear to have leaked very far.

A geologic map and cross section are presented in Figure 5.[60] Extended discussions of the geologic environment surrounding Oklo

[58]A. Gankarz, "U-Pb Age (2.05 × 10^9 Years) of the Oklo Uranium Deposit," *IAEA Symposium Proceedings*, IAEA-TC-119/40, Vienna 1978.

[59]G. Branche, et al., "Données Chimiques et Mineralogiques sur les Gisements D'Oklo," *IAEA Symposium Proceedings*, IAEA-SM-204/17, Libreville, Gabon, 1975, p. 119.

[60]Gauthier-Lafaye, et al., "Données Nouvelles sur l'Environment Geologique des Reacteurs Naturels," *IAEA Symposium Proceedings*, IAEA-TC-119/2, Vienna, 1978, p. 35.

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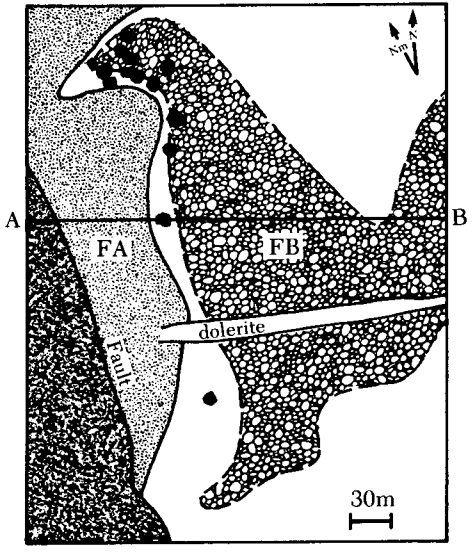
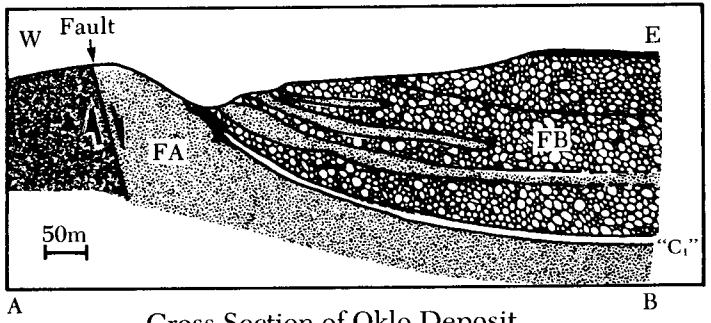
FIGURE 5

GEOLOGIC MAP AND CROSS SECTION OF OKLO NATURAL REACTOR
(ADAPTED FROM GAUTHIER- LAFAYE ET AL.)



Map of Oklo Deposit



Cross Section of Oklo Deposit

Manganese Dioxide Coated Exposures
Argillite and Sandstone
Conglomeratic Zone C_1
Sandstone
} Components of FA-FE p€ Franceville Deposits

p€ Basement

Critical Zones

Basaltic Dike (Igneous)

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can be found in the proceedings of two symposia held by the International Atomic Energy Agency (IAEA) in 1975 and 1977.

There have been many investigations to discover whether or not fission products or actinides generated in the Oklo critical zones have ever leaked out during their approximately 600,000 year time period of fission.[61] An excellent paper compiling the work in this area was written by E. A. Bryant et al.,[62] which we summarize in Table 5.[63-65] We have also included other important phenomena.

Oklo demonstrates that wastes can be buried for exceptionally long periods of time with very little release of the highly toxic radionuclides. Even in the apparently highly permeable geologic formations in which it was originally found and perhaps deposited (conglomerates) that have been hit by faults and magmatic intrusions, the exceptionally hazardous materials (e.g., plutonium) appear to be effectively retained. They remained in the critical zones until completely decayed.

The conditions of Oklo appear to include tectonic stability and some degree of adsorbent material (clay) enclosure. We should certainly be able to improve on the Oklo geologic site by providing: deep burial in "protective" geologic formations, e.g., thick shales, which are very well redox buffered at low potentials; attention to thermal generation to reduce the possibility of fracturing and "hot spring" formation; chemically and perhaps mechanically optimized canister surrounding adsorbent packaging; ^{129}I separation and special waste treatment for long-lived containment (if waste reprocessing is allowable); waste enclosure in glass or Synrock; and canister coverage by stainless steel or copper. It is quite clear that current technology has most of these objectives already in mind.[66] Unfortunately, we cannot yet be as positive about long-term disposal of a large number of different, high-volume hazardous chemical wastes.

[61]R. Hageman, et al., "Estimation de la Durée de la Reaction, Limitations Imposées par les Données Neutroniques," *IAEA Symposium Proceedings*, IAEA-SM-204/28, Libreville, Gabon, 1975, p. 415.

[62]E. Bryant, et al., "Oklo, an Experiment in Long Term Geologic Storage, Actinides in the Environment," A. Friedman, ed., in *ACS Symposium*, Series 35 (Washington, D.C.: American Cancer Society, 1976), p. 89.

[63]Ibid.

[64]ORNL, *ORIGEN Isotope Generation and Depletion Code-Matrix Exponential Method*, CCC-217, May 3, 1976. Run courtesy of Steven G. Oston, TASC, Reading, Mass.

[65]D. Rai and R. J. Serne, *Solid Phases and Solution Species of Different Elements in Geologic Environments*, PNL-2651, March 1978; and B. Allard, H. Kipatsi, B. Torstenfelt, *Sorption av langlivade radionukider i lera ock berg Del 2, KBS Teknisk Rapport 98*, Stockholm, Sweden, 1978.

[66]DOE-NRC, *Storage and Disposal.*

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TABLE 5

MIGRATION OF FISSION PRODUCTS AND ACTINIDES IN THE "ZONE 2" REACTOR AT THE OKLO MINE, ELEMENT AND MIGRATION BEHAVIOR COMPILED BY E.A. BRYANT ET AL.[63]

Element	Migration Behavior	Percent Left After [10 years][a]	Other Important Characteristics[b]
Kr	Measurable traces, 0.01 to 1% remaining	1.53%	^{85}Kr – 10.4 yr half-life
Rb	Measurable traces, less than 1% remaining	5×10^{-9}%	—
Sr	Measurable traces, less than 10% remaining	—	—
^{90}Sr (Now ^{90}Zr)[c]	Small migration, most decayed in place	31.2%	At 1000 yr–2.5×10^{-9}% of the ten-year amount (curies) remains. 28 yr half-life
Zr	Redistributed, mostly in place	5×10^{-4}%	—
Nb	Mostly retained	2×10^{-4}%	^{93m}Nb–3.7 yr half-life
Mo[d]	90% missing	—	—
^{99}Tc (Now ^{99}Ru)	Redistributed, migrated as Tc	4×10^{-3}%	—
Ru	Large fraction retained, redistributed	0.28%	—
Pd,Ag	Mostly retained	8×10^{-5}%	—
Cd	90% missing	2×10^{-3}%	^{113m}Cd–14 yr half-life
Te	Mostly retained	0.07%	^{125m}Te–58 yr half-life

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TABLE 5 (cont.)

MIGRATION OF FISSION PRODUCTS AND ACTINIDES IN THE "ZONE 2" REACTOR AT THE OKLO MINE, ELEMENT AND MIGRATION BEHAVIOR COMPILED BY E.A. BRYANT ET AL.

Element	Migration Behavior	Percent Left After [10 years][a]	Other Important Characteristics[b]
I[c]	Mostly gone	1×10^{-5}%	
Xe	Measurable traces, 0.01 to 1% remaining	~0	Xenon–longest half-life = 36.4 days
Cs[c]	Measurable traces (as Ba), mostly missing	44.7%	At *1000 yrs*–Percentages of 10 yr amounts (curies) remaining listed below: ^{134}Cs–2.19 yr half-life, @ 1000 yr = 0.0% ^{135}Cs–2×10^{6} yr half-life, @ 1000 yr = 100.% ^{137}Cs–30 yr half-life, @ 1000 yr = 1.2×10^{-8}% Total Cs + ^{137m}Ba = 1.6×10^{-4}% Compared to initial [10 yr] amount
Ba	Obscured by natural but mostly gone		
Ce, Nd, Sm, Gd	Very little migration	0.38%	
Pb	Redistributed, ~⅔ missing from core	4×10^{-6} (total Pb)	

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^{232}Th (^{236}U, ^{240}Pu)	Mostly retained	18.5%	Containment of these nuclides and chemical identity assumptions with different isotopes in brackets reveals excellent evidence for containment of hazardous, long-lived radionuclides
^{209}Bi (^{237}Np, ^{241}Pu)	Mostly retained		
^{235}U (^{239}Pu)	No ^{239}Pu separation from ^{238}U		
U	Probably no major migration, some redistribution, (see text)		
		$\Sigma = 96.7\%$[e]	

[a]The percentage of radionuclides (curies) compared to the total amount remaining in unprocessed nuclear waste 10 years after removal from a reactor. Data was provided by ORIGEN Program.[64]

[b]Concerns only those isotopes recognized as being a radiogenic hazard 10 years after nuclear fuel confinement, e.g., 1 μCi (microcurie) or greater via ORIGEN program for 1 MW_e of industrial energy production per year and those that have shown significant release at Oklo.

[c]Environmental questions in effective waste disposal, designated by Oklo.

[d]Nb decay product.

[e]If ^{126}Sn, ^{125}Sb, ^{126m}Sb and ^{126}Sb (0.17%), ^{147}Pm (1.99%), and ^{154}Eu (1.17%) were included, this summation would equal 100%. Unlikely to be released, due to high insolubilities, and a very large retardation factor for Eu.[65]

NOTE: The standard chemical symbols are used for elements, i.e.: Kr (krypton), Rb (rubidium), Sr (strontium), Zr (zirconium), Nb (niobium), Mo (molybdenum), Tc (technetium), Ru (ruthenium), Pd (palladium), Ag (silver), Cd (cadmium), Te (tellurium), I (iodine), Xe (xenon), Cs (cesium), Ba (barium), Ce (cerium), Nd (neodymium), Sm (samarium), Gd (gadolinium), Pb (lead), Th (thorium), U (uranium), Pu (plutonium), Bi (bismuth), Np (neptunium), Sn (tin), Sb (antimony), Pm (promethium), and Eu (europium).

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V. Evaluating the Risks of Hazardous Chemical and Nuclear Waste

Risk Assessment

A large number of health effects such as acute toxicity, birth defects, temporary toxicity, and human cancer can be induced by chemical exposure. At this time, cancer is the most feared. Given our present knowledge, even if we could calculate the exact amounts of hazardous compounds that would be received by a population per given sample of hazardous waste after waste treatment and release, we would still have other uncertainties in estimating the resultant health effects. This is particularly true in the case of hazardous chemicals. By 1978, for example, only 26 chemicals had been shown to have carcinogenic effects in humans: aflatoxins, 4-aminobiphenyl, arsenic compounds, asbestos, auramine, benzene, benzidine, bis-chloromethyl ether, calcium oxide, chloramphenicol, chromium, cyclophosphamide, diethyl stilbestrol, hematite (mining), isopropyl oil, melphalan, mustard gas, 2-napthylamine, nickel (nickel refining), *N*, *N*-bis(2-chloroethyl)– 2-napthylamine, oxymetholone, phenacetin, phenytoin, "soot, tars, and oils," vinyl chloride, and "another unknown."[67] Approximately 56 more have been cited as possibilities where less definite epidemiological data exists. Hence, we are stuck with extrapolating human effects from animal data or even bacterial data, as with the Ames mutagenicity test.[68]

Dr. E. A. Crouch has plotted carcinogenic potencies of various chemicals obtained from data taken from one genetic or sexual set of laboratory mice or rats against others, where data was collected in an identical fashion, and also against human epidemiological data.[69] A 1:1 correlation fits remarkably well – even with man, if the dose is calculated in mg of chemical given per kg of organism per lifetime. The scatter of data points about the correlation line, however, is approximately a factor of 10 when responses of different rodents are compared. This becomes slightly higher when the correlation is between a rodent and man. Even where excellent animal data has been collected for chemicals, we have this additional degree of uncertainty in accurately estimating what human risks might be. With

[67]T. H. Maugh II, "Chemical Carcinogens: How Dangerous are Low Doses," *Science* 202 (October 6, 1978):37.

[68]J. McCann, et al., "Detection of Carcinogens as Mutagens in the Salmonella/microsome test: Assay of 300 Chemicals," *Proceedings of the National Academy of Sciences* 78, no. 12 (December 1975):5135.

[69]E. A. Crouch and R. Wilson, "Interspecies Comparison."

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radiation exposure, the problem is a little better defined. A large amount of epidemiologic data is compiled in the BEIR Report of 1980.[70]

An additional uncertainty in estimating the potential effects of a low dose of environmental pollution encounters has to do with extrapolation from high-dose human, epidemiologic data or high-dose animal, toxicity data, to lower doses found in the environment. It is generally made with a simple, linear dose-response relationship. However, this type of estimate could predict expected numbers of cancer that are either too low or too high compared to real effects. For example, it could be that every individual would be deactivating, or thoroughly unresponsive to, a given toxin up to a threshold amount, hence, no excess cases over the background. In the case of selenium, low levels are thought to be quite helpful to one's health. Low-level Se-containing pills are even for sale in health food stores. High levels of selenious and selenic acid are known to be carcinogenic, nonetheless. Many other transition metals which are toxic at high levels are known to be required for life at very low levels as well.

On the other hand, lower doses could give a higher dose response than expected from a linear correlation. This might be due to induction of a partially deactivating biochemical response at high levels, leading to more damage at low to moderate doses, or it could be explained by saturation of one set of pre-carcinogen processing enzymes at these levels. At least one case of this type of response has been observed – with nitrite.[71] In general, however, the data accumulated so far indicates that the linear dose-response relationship would now be about the best to use for an estimate.

Not only do we have the problem of low dose adding to risk uncertainty compiled so far, we have additional problems with time-dependence of exposure. For example: Is the individual who receives a concentrated dose for a short time subjected to the same increase in the probability of cancer as another individual who is exposed to low-level doses for a long time, but has the same cumulative dose?

According to Boutwell, *cancer initiation* is thought to occur through triggering an error-prone DNA repair system and is *irreversible*.[72] In one experiment, two groups of mice were initiated with 25 mg of

[70]BEIR Committee, NAS, *The Effects on Population of Exposure to Low Levels of Ionizing Radiation*, 1980.

[71]Cf. P. Newberne, "Nitrite Promotes Lymphoma, Incidence in Rats," *Science* 204 (June 8, 1979):1079.

[72]Cf. R. K. Boutwell, "Some Biological Aspects of Skin Carcinogenesis," *Progress in Experimental Tumor Research* 4 (1964):207.

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DMBA (dimethylbenzanthracene) per mouse. One group was promoted with croton oil for 16 weeks, starting one week after initiation. The other group received the same dose of croton oil, but the first application of promoter was delayed 16 weeks after initiation. Almost identical responses in terms of papillomas per mouse and tumor incidence per mouse can be seen for both of these groups. This demonstrates that for benzanthracene, the dose-response is irreversible, which could imply that the cumulative dose is the one that counts.

Bernard Cohen, however, has discussed studies showing that high dose rates of x-rays and gamma rays in animals are more carcinogenic than low-dose rates.[73] This demonstrates that with this type of radiation, a high-level dose delivered very rapidly is much more dangerous than the same cumulative dose delivered at low levels over a long time.

With tumor promoters, however, results have been quite different. In an experiment where all mice were initiated with 75 micrograms of dimethyl benzanthracene, and twelve 125-microgram doses of croton oil were applied weekly, 45 percent came down with tumors. When 12 identical doses were applied on identically initiated mice at two-week intervals, only 39 percent developed tumors. When applications of the 12 identical promoter doses were extended to four-week intervals, no tumors developed.[74] This demonstrates that cellular alterations *promoted* by this type of chemical reaction are *reversible*.

In addition, greater than additive risks have been found associated with drinking alcoholic beverages and smoking at the same time.[75] Other than additive responses may well be found with other hazardous chemical mixtures. Cancer induction by radiation and smoking has shown to be age-dependent as well, especially at high doses. This information suggests that quite a bit of uncertainty exists in determining what the actual risks might be; especially when other uncertainties such as the amounts of waste generated, methods of disposal, and fate-persistence are included.

Evaluating the total amounts of risk associated with hazardous chemical waste and nuclear waste by increasingly accurate methods could be quite helpful in determining which one represents the worst

[73]Cf. B. L. Cohen, "The Cancer Risk from Low Level Radiation," *Health Physics* 39 (1981):659.

[74]R. K. Boutwell, "Skin Carcinogenesis."

[75]J. Higginson, "Environmental Carcinogenesis: Misconceptions," IPH Seminar, Harvard University, March 5, 1979.

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problem. At this stage, particularly with hazardous chemical wastes, we are just beginning to accurately determine what the potential effects might be.

Implications Given by Selected Cases of Hazardous Waste

In the preceding sections, we found that the *quantity* of nuclear waste is markedly smaller than the *quantity* of hazardous chemical waste; but some wastes are more hazardous than others, and the high-level nuclear waste has a specific hazard (hazard-per-unit weight) which is greater than that of toxic chemical wastes. We might consider a hazard index equal to the product of the quantity and the specific hazard. While this is well known for nuclear waste, we found that the specific hazard for chemical waste is little known.

Moreover, the nature of chemical waste is changing. As public and regulatory attention has been directed to the waste problem, the cost of waste disposal has increased, and it may now be both cost-effective and a better public relations policy for an industry to reduce quantities of waste by concentration. But it is likely that most of the chemical waste in the future will have a much higher specific hazard than in the past.

In addition to the Love Canal and Oklo cases, there are several other examples of waste disposal problems that have implications for waste disposal issues. First, let's consider acrylonitrile. This is a base material for a variety of acrylic products. It is highly toxic and the allowed exposure level for workers has been reduced from 20 ppm to 2 ppm. It has been found to be carcinogenic in rats.[76] What should we do with acrylonitrile-contaminated waste? Burn it? Chemically break it down? Expose it to sunlight (ultraviolet)? Bury it? Put it in a "secure" landfill? Or, dump it in the oceans? At the present time a large amount of the waste has been buried in abandoned mines. This probably ensures that it remains out of the environment for a number of years, although the burial place is certainly *not* as secure as that proposed for nuclear waste.

A second example pertains to nuclear waste. Here a proposal has been made to keep it out of the environment either by a continuously monitored storage (sometimes called temporary storage, although it could be permanent if we wish) or by burial (sometimes called permanent disposal). The DOE arrangements guarantee containment within a waste canister disposal site for 1,000 years,[77] after which the degree of confidence might decrease to some extent.

[76]Personal communication, Dr. Jessie Norris, Dow Chemical Co.
[77]DOE-NRC, *Storage and Disposal.*

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In this case, it is not molecular-structural changes that reduce or increase the toxicity; instead, radioactive decay ensures that the toxicity of nuclear waste diminishes considerably with time. Hence, removal from the environment even for a limited time accomplishes a useful purpose of reducing the hazard. It has also been suggested that after a few hundred years disposal of nuclear waste in the deep oceans can *reliably* reduce the risk to acceptable values.[78]

A third example, hopefully rare, is what occurs when we merely put corn and nut products in a rubbish pile. They grow a mold, *Aspergillus flavus parasiticus*, which produces the highly toxic and carcinogenic mycotoxin-aflatoxin B1. It was the untimely death of farm animals that had eaten from a rubbish pile that led to the discovery of aflatoxin B1 – one of the most potent carcinogens known. In this example, comparatively innocuous materials put on a waste pile became highly toxic by natural biochemical reactions.

As a fourth example, we refer to a study by Cohen of the way in which natural cadmium, normally in the ground, will enter the environment.[79] Assuming that cadmium is carcinogenic with a proportional dose-response relationship, one year of coal burning in the United States would eventually cause 20,000 fatal cancers. Similar numbers could be derived from a number of other pollutants. The cadmium is released to the environment either by burning coal, or more simply by bringing it to the surface in the mining process. The quantities of material (approximately 10^9 metric tonnes are generated in the U.S. annually) are so great that no secure waste disposal process that we discuss here is likely to be implemented in all cases. Much of this waste becomes widely spread into our environment with time. If there is a threshold for cadmium toxicity and carcinogenicity, then the calculated effect would be close to zero, since the cadmium is widely dispersed. We must be cautious, however, in using this example to ridicule the general assumptions of a proportional dose-response relationship with no threshold. First, it is conceivable that this large number is correct. Second, it is likely that metals (e.g., Cd, As, Se) behave differently from hydrocarbons in methods of cancer induction, and that the former set could exhibit a threshold and the latter may not. Third, we must remember that there is a lot of cancer around (18 percent of all deaths), and the addition of a small amount of carcinogen to a large pool of similarly acting carcinogens could pro-

[78]B. L. Cohen, "Ocean Dumping."

[79]B. L. Cohen, "Consequences of a Linear, No Threshold Dose-Response Relationship for Chemical Carcinogens," *Journal of Risk Analysis* 1, no. 4 (1981).

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duce a differential effect (proportional to added dose) even if thresholds exist. Therefore, without minimizing the importance of Cohen's instructive example, we question its generality.

There is also the problem of production and disposal of certain "phenoxy compounds." They have a variety of uses, including phenoxy herbicides (2-4-5T) and can be intermediates in the cosmetic industry. Although 2-4-5T is toxic and possibly weakly carcinogenic itself, the main problem arises because traces of a very toxic and carcinogenic chemical by-product are associated with it: 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD), usually referred to as dioxin. Herbicides have been manufactured in the past (Agent Orange of the Vietnam War) containing 150 parts per million of dioxin, although more recently the figure has been as low as 20 parts per billion. In a well-known accident at Seveso, Italy, significant amounts of TCDD were unintentionally generated and released, leading to serious human health problems downwind. Dioxin appears as the product of a number of combustion processes.

TCDD poses a lot of questions, and at this stage, we have very little information for defining the long-term problems with this chemical. At least some information is available concerning its fate and persistence in the environment.[80] It breaks down when exposed to U.V. in methanol, benzene, Esteron, and Agent Orange solutions, but is stable to U.V. when exposed directly or suspended in pure aqueous solutions by itself. Photolysis in surfactant modified aqueous solutions has been demonstrated, and this has some possibility of being developed into a treatment process.

TCDD also accumulates in fatty tissues, and bioaccumulation and concentration have been observed in ecological food chains. It is strongly adsorbed to suspended organic particulates in aqueous systems and to soil materials. Although it is generated at moderate incineration temperatures, high temperatures would undoubtedly decompose it. A detailed investigation of the chemical nature of degradation products generated by anaerobic bacterial metabolism, U.V. photolysis, or special high-temperatures incineration has yet to be done, particularly in relation to the possibility of toxic and carcinogenic effects.[81]

It seems that there are a number of questions to be answered before we can be secure in our ability to handle materials such as TCDD. One of the key issues that we are dealing with is the time of persis-

[80]M. A. Callahan, et al., *129 Priority Pollutants*.
[81]Ibid.

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tence of hazardous chemical wastes versus nuclear wastes. Hazardous chemical waste metals such as cadmium will be stable for the lifetime of this planet. With nuclear waste, on the other hand, radioactive decay greatly decreases toxicity with time.

VI. Conclusion

Adopting a waste-treatment approach in comparing hazardous chemical and nuclear wastes appears to have a greater degree of certainty in being able to discern which type of waste is worse, compared to estimating expected cancer risks for all types of hazardous waste over time. If the volumes of waste are low, laboratory and field experiments can be performed to demonstrate low leakage. If the volumes of waste are high, laboratory experiments are too far removed from the real world. We already have far larger volumes of hazardous chemical waste than high-level nuclear waste. The sealing properties of stainless steel canisters and retention properties of bentonite-mix sealing mixtures, the geologic surveillance of preliminary burial sites and depth of burial, the costs currently being sustained for effective nuclear waste disposal planning, the decision as to when burial will start (about 20 years from now), plus the historical evidence of retention of nearly all the long-lived isotopes at Oklo give straightforward information for current nuclear waste disposal plans. When comparing these parameters to the number of hazardous chemicals generated, the amounts, the current methods used for disposal, and what happened at Love Canal, we can suggest that hazardous chemical waste represents the greater problem.

We believe that many of the presently used waste disposal procedures may be inadequate in the long run. We are reasonably content that the correct questions are being asked about nuclear waste disposal, but the perplexing questions about chemical waste disposal are only now being asked – and even now, only rarely. In addition, there are as yet *no good answers*. For these reasons, we believe that hazardous chemical wastes may pose many future problems for society, while acceptable solutions are clearly in sight for high-level nuclear waste.

Finally, we think that the comparisons made in this paper will help the American people understand the problems and the decisions that are faced by government agencies and the voters. It would help if the news media would present such comparisons.

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THE POLITICAL ECONOMY OF CORPORATE WELFARE: INDUSTRIAL REVENUE BONDS

James T. Bennett and *Thomas J. DiLorenzo*

Since the mid-1930s state and local governments have issued tax-exempt "industrial revenue bonds" (IRBs) to finance selected business enterprises. The original argument for the creation of IRB tax exemptions is the same as that for their present day continuation: Private capital markets allegedly "fail" to provide adequate financial resources to many firms, especially small businesses, and this inadequacy reduces the economy's productive capacity and exacerbates unemployment. Each state, and nearly every major local government, now has an "industrial development agency" which sells IRBs. Although it is impossible to gauge accurately the total volume of IRB sales, since many are privately negotiated, the Congressional Budget Office estimated total sales to exceed $10 billion in 1981.

This paper assesses the likely effects of the IRB finance on the allocation of resources. The second section discusses the development of IRB finance followed by a brief description of the activities of industrial development agencies in the third section. The fourth and fifth sections examine the rhetoric and reality of industrial development agencies and demonstrate that they are more likely to reduce the economy's productive capacity than enhance it and to distort the market process. The final section contains a summary and conclusions.

Cato Journal, Vol. 2, No. 2 (Fall 1982). Copyright © Cato Institute. All rights reserved.

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The authors gratefully acknowledge research support from the Sarah Scaife Foundation, the Earhart Foundation, and the National Federation of Independent Business.

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The Development of Industrial Revenue Bond Finance

State and local governments issue two types of debt: general obligation bonds, which are backed by "the full faith and credit" of the issuing government and serviced with tax revenues; and revenue bonds, which are not guaranteed and are serviced by user charges from projects to be financed and from intergovernmental grants. During the late 19th century profligate general obligation borrowing practices by state and local governments led to frequent defaults and financial crises. Consequently, state statutory and constitutional restrictions on local government debt were imposed which placed limits on the amount of general obligation indebtedness as a percentage of the tax base, required referenda for bond issuance, restricted debt maturity dates (usually 20 years), and established interest rate ceilings.

To circumvent these restrictions, revenue bonds were adopted by local (and state) governments. Revenue bonds are generally issued by various public enterprises, the borrowing, spending, and employment of which are not included in the budget of the jurisdiction which created the "off-budget enterprise" (OBE). One of the first OBEs was the Port Authority of New York and New Jersey which was modeled after the Port of London Authority. There are now over 10,000 OBEs at the local level of government in the United States and thousands more at the state level.[1]

In 1936 Mississippi became the first state to permit local governments to create a particular type of OBE, the industrial development agency (IDA), for issuing tax-exempt industrial revenue bonds to finance private businesses. In contrast to "industrial development bonds," which may be backed by the "full faith and credit" of the issuing government and are therefore on budget and voter approved (although used much less frequently than IRBs), the only backing for IRBs is the credit of the borrowing firm, the revenue from projects financed and operated by the firm, or the firm's facilities. If the borrower defaults, the bondholder bears the loss. Since interest income from IRBs is tax exempt, private businesses can borrow at below market interest rates.

By 1960, 17 states permitted the use of IRBs. Twenty-five additional states passed IRB-enabling legislation during the 1960s, and

[1]For a discussion of off-budget enterprises see Annmarie H. Walsh, *The Public's Business: The Politics and Practices of Government Corporations* (Cambridge, Mass.: MIT Press, 1980).

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the volume of reported IRB sales rose by 1,700 percent between 1960 and 1968, from $100 million to $1.8 billion.[2] In 1968 IRBs constituted approximately nine percent of long-term, tax-exempt municipal security sales compared with just one percent in 1960. This increase was due largely to the rise in issue size, which grew from an average of $360,000 in 1957 to $7.8 million in 1967. Large corporations had come to realize the usefulness of IRBs in financing investment projects. For example, between 1962 and 1968 all major tire manufacturers (Armstrong, Cooper, Dunlop, Firestone, Goodrich, Goodyear, Mansfield, Mohawk, Uniroyal) used IRB financing, as did many other large manufacturers.[3] Critics of IRB financing soon began to levy charges against these companies: They used "public funds" to subsidize projects that would have been undertaken without subsidies; the projects resulted in revenue losses to the treasury; and they led to an increase in state and local borrowing costs. The Congress was sympathetic to these views and in 1968 passed the Revenue Expenditure and Control Act which intended to limit IRB use. The act withdrew the tax exemption for all but a number of exceptions such as air and water pollution control equipment, airports, docks, wharves, electricity, gas and water services, industrial parks, parking, mass transportation, housing, sewage, sports facilities, and trade shows and convention centers. The act also exempted bonds with a face value not exceeding $5 million to finance plants and equipment for industrial facilities. The purpose of this exemption was to change the focus of IRB finance so as "to assist *small* businesses in locating in a community"[4] (emphasis added).

In 1978 President Carter, anxious to expand the Urban Development Action Grant (UDAG) program, proposed that the limits for "small-issue IRBs," often used in combination with UDAG grants, be raised to $10 million. Congress complied and the higher limit went into effect on January 1, 1979.

Measuring the current volume of IRB sales is virtually impossible, since most IRBs are small issues which are negotiated with local banks and need not be reported to the Securities and Exchange Commission. Nevertheless, some estimates have been made, and the most reliable are probably those of the Congressional Budget Office which surveyed IRB-issuing agencies in each state.[5] These estimates

[2]Congressional Budget Office, *Small Issue Industrial Revenue Bonds* (Washington, D.C.: CBO, April 1981), p. 9.

[3]Ibid.

[4]Wilbur D. Mills, *Congressional Record*-House, October 10, 1968, p. 30603.

[5]Congressional Budget Office, p. 14.

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are shown in Table 1 and remain underestimates since some states do not maintain records of IRB sales. Even with these data limitations it is clear that IRB sales have grown dramatically, having increased by 546 percent between 1975 and 1980.

The Industrial Development Agency

The conduit through which IRBs are issued is the industrial development agency, which exists at both the state and local levels of government. Each state has established at least one IDA at the state level of government. In recent years the activities of IDAs have expanded substantially, as is evidenced by the rapid increase in IRB sales and the fact that total agency budgets increased by over 300 percent during the 1966–73 period, from $2.57 to $7.63 million.[6]

At the local level of government IDAs are established by local governments and managed by governing bodies comprised of at least five political appointees who are usually local politicians or professional "urban planners." A key role is played in IRB financing of private businesses by "local industrial development corporations" (LIDCs). LIDCs are "non-profit" corporations formed by local business interests. Their purpose and role in the IRB-financing process has been succinctly stated by the Council of State Governments:

> Many . . . industrial finance authorities do not make loans directly to industrial prospects. In these states the LIDC serves as a bridge

TABLE 1

ESTIMATES OF THE VOLUME OF SMALL ISSUE INDUSTRIAL REVENUE BONDS: 1975–1980
(billions of dollars)

Year	Congressional Budget Office	Public Securities Association	Daily Bond Buyer
1975	$1.3	$0.5	$0.5
1976	1.5	0.4	0.3
1977	2.3	0.8	0.5
1978	3.5	0.9	0.6
1979	7.1	1.7	1.3
1980	8.4	1.6	1.4

SOURCE: Congressional Budget Office, *Small Issue Industrial Revenue Bonds* (Washington, D.C.: CBO, April 1981), p. 14.

[6]Institute of International Law and Economic Development, *The Industrial Revenue Bond As a Financial Attraction Device* (Washington, D.C.: Economic Development Administration, 1978), p. 144.

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> between the authority and the new industry. In some states this procedure is necessitated by constitutional provisions prohibiting the loan of public monies to private industry. The LIDC, as a nonprofit corporation, however, can hold title to industrial property and receive the loan.[7]

The Rhetoric and Reality of Industrial Development Finance

Although many states outlaw the practice of tax exemptions for selected private firms or individuals, IRBs have always survived these limits because of LIDCs, as well as what is known as the "public service doctrine."[8] This "doctrine" states that projects financed by IRBs must confer a "public benefit," such as the development of a new industry or a reduction in unemployment. A typical example is the Pennsylvania Industrial and Commercial Development Authority Law, which states that local industrial development authorities shall operate

> for the purposes of alleviating unemployment, maintaining employment at a high level . . . and developing business opportunities by the construction, improvement, rehabilitation, revitalization, and financing of industrial, commercial, manufacturing, research and development enterprises.[9]

These activities are said to "promote the health, safety, morals, and general welfare of the people."

The rationale for government intervention through IRB financing is therefore based on the classic notion of market failure. That is, it is alleged that if for some reason information about market opportunities, production technology, access to capital markets, etc., is not available to all producers, market forces will not allocate resources in an efficient way and the economy will produce below its capacity. The market failure argument has been used in defense of IRB finance of "small" businesses in particular, given the emphasis which has been placed on limiting industrial revenue bond use to "small issues."

Even though "market failure" is the principal rationale for public policy intervention, it is now widely acknowledged that the "inadequacy of market outcomes" is only a necessary, not a sufficient, condition for government intervention in the economy.[10] Public pol-

[7]Council of State Governments, *Economic Development in the States* (Chicago Council of State Governments, 1966), p. 1.

[8]Institute of International Law and Economic Development, p. 76.

[9]Ibid.

[10]See Charles Wolf, Jr., "A Theory of Nonmarket Failure: Framework for Implementation Analysis," *Journal of Law and Economics*, April 1979, pp. 107–139.

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icy formulation requires that market failures be compared to the prospective failures of government to "correct" them. There are many examples of government intervention actually exacerbating problems caused by "market inadequacies," i.e., urban renewal and poverty programs, regulation of the airline and trucking industries, and so on. When political resource allocation replaces market allocation, the consequences are likely to be arbitrary and are often contrary to the interests of the general public. Consumer sovereignty, which induces producers to allocate resources to their most highly valued use, is replaced by "political sovereignty." And past experience provides no reason to expect politicians to be particularly concerned with allocative efficiency. Equity, however defined, is no more likely under political resource allocation than market allocation, and politics can create greater inequities than does the market.[11] How politicians allocate resources that are under their control will depend upon their perceptions of the personal benefits (votes, campaign contributions, etc.) that accrue from alternative allocations. As James Buchanan has observed:

> Politicians are politicians because they want to be. They are no more robots than other men. Yet the politician who would do nothing other than reflect the preferences of his constituents would, in fact, be robotlike in his behavior. Few, if any, politicians are so restricted. They seek office because they seek "profit," in the form of "political income," which will normally be obtained only if their behavior is not fully in accord with the desires of electoral majorities. Those men who are attracted to politics as a profession are likely to be precisely those who have considerable interest in promoting their own version of good government, along with those who see the opportunities for direct and indirect bribes, and those who evaluate political office as a means toward other ends.[12]

Thus, even if there are market imperfections which preclude "small" firms from competing, whether industrial development agencies can promote economic growth and reduce unemployment is uncertain. Such goals will only be pursued if it is in the interest of political decision makers to do so. In fact, it may be contrary to the interests

[11]A classic example is federal "urban renewal" programs which have demolished about twice as many housing units as they have replaced, and a large percentage of those replaced have been for middle- and upper-income individuals. Wealthier people are not only better off competing in the marketplace than less wealthy people, but are also more influential politically.

[12]James M. Buchanan, "Why Does Government Grow?" in Thomas E. Borcherding, ed., *Budgets and Bureaucrats: The Sources of Government Growth* (Durham, N.C.: Duke University Press, 1977), pp. 3–18.

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of IDA managers to reduce unemployment and to increase economic growth. With low unemployment and steady growth, there is little need for an "agency" to "promote" low unemployment, just as without an "energy crisis" there is little need for a Department of Energy.

The Effects of Industrial Revenue Bond Finance

Can IDAs be expected to improve the allocation of resources caused by market imperfections and to aid the economy in producing at full capacity? At the outset, it is important to recognize that in one very important respect IDAs intensify rather than ameliorate market imperfections. Namely, when IDAs grant preferential treatment to failing businesses, as they often do, consumers are forced to pay (through taxes) for goods and services they would not otherwise prefer, and inefficient producers make use of resources that would otherwise be put to more highly valued uses in other industries. Both consumer sovereignty and production efficiency are reduced. Conferring preferential tax status on failing businesses, "large" or "small," constitutes nothing more than special interest legislation which distorts the structure of the market from that which would otherwise emerge.

Once IDAs are established and begin to prop up failing businesses, there are stong incentives for their continued growth and expansion. The reason for this is that the selected tax exemptions are provided to relatively small, concentrated groups, whereas the costs (in resources diverted from their highest-valued uses) are widely dispersed among the general public and well hidden. The selected group obviously has a strong incentive to promote the expanded use of IRB finance, while the average taxpayer has little incentive to oppose it, even though the *total* costs to society may far exceed the benefits to the firms.

Can IDAs be expected to aid "small" businesses which would otherwise be precluded from operating due to market imperfections? There is no doubt that many small businesses, failing or otherwise, receive IRB financing from local IDAs. It is also quite clear that there is a great deal of "political income" to be earned by offering IRB financing to large as well as small firms. In fact the record clearly shows that IRBs have been used to finance large manufacturing firms as well as auto dealerships, motels, doctors' and lawyers' offices, cable TV systems, banks, ski resorts, bowling alleys, country clubs, topless bars, and "adult" bookstores.[13] Thus, a large volume of IRBs

[13]Robert M. Bleiberg, "Corporate Food Stamps," *Barron's*, August 17, 1981, p. 7.

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are used to finance the nation's largest corporations. Ironically, the subsequent advantages granted to larger corporations allow them to drive smaller retailers and merchants out of business in many cities.

The Congressional Budget Office recently completed a study of IRBs and found that about 16 percent of the total volume of small issue IRBs in 1978 and 1979 went to the top 50 companies on the Fortune 500 list. Table 2 lists selected Fortune 500 (industrial and nonindustrial) firms which received $1.2 billion in IRB financing in 1978 and 1979. Other Fortune 500 manufacturing firms received an additional $390 million. As shown in Table 2, large manufacturing and retailing firms have used IRBs to finance major investment projects. For example, K mart financed 96 stores in 19 states between 1975 and 1980, including 35 stores in 1980 alone. Similarly,

TABLE 2

SELECTED FORTUNE 500 FIRMS RECEIVING IRB FINANCING IN 1978–79

Firm	Amount of Bond Issue
Procter & Gamble Co.	$ 6,500,000
General Mills, Inc.	26,200,000
K mart Corp.	90,140,000
Exxon Corp.	24,000,000
Mobil Oil Corp.	63,000,000
Standard Oil Co. of Ohio	675,000,000
Phillips Petroleum	20,000,000
Atlantic Richfield Co.	61,055,000
Union Oil of California	22,500,000
Burlington Industries	9,500,000
Mead Corp.	7,800,000
Ford Motor Co.	23,345,000
McDonald's Corp.	17,400,000
Hoover Universal, Inc.	20,000,000
B. F. Goodrich Co.	3,000,000
Goodyear Tire & Rubber Co.	20,890,000
Weyerhaeuser Co.	18,000,000
Norton Co.	28,800,000
Dana Corp.	13,605,000
Union Camp Corp.	20,470,000
Georgia Pacific Corp.	9,500,000
Joy Manufacturing Co.	7,200,000

SOURCE: *Moody's Municipal and Government Manual* (New York: Dun and Bradstreet Co., 1981).

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McDonald's financed 32 new restaurants in Pennsylvania and Ohio in 1979.[14] Other major companies making use of IRBs include Nabisco, PepsiCo, Allied Chemical, Container Corporation of America, and International Paper, to name only a few. Overall, more than half of the Fortune 500 firms received IRB financing during the 1978–79 period.

Thus, IRBs further distort the efficient (market) allocation of resources by providing "tax exemptions" to selected firms, large and small. Not applying laws regarding tax reduction equally to *all* firms and individuals is sure to disrupt the entrepreneurial process whereby scarce resources tend to be allocated to their most highly valued uses. Since market prices are altered by such arrangements, information regarding true benefits and costs is distorted, which makes it difficult, if not impossible, to discover the most highly valued resource use or least cost production techniques.

IRB finance of large corporate enterprises imposes further costs on society by establishing regional monopolies in various industries. One can readily think of how the construction of a K mart can drive small local retailers who have not benefitted from IRBs out of business. Established merchants and restauranteurs in many cities have protested IRB financing of their larger competitors but have had limited success in restraining their use. In July 1980, however, over 2,200 voters in Ravalli County, Montana, signed petitions calling for a referendum on the use of $4 million in IRBs to construct a K mart shopping center. Local merchants eventually succeeded in having the bond issue placed on the November election ballot. The bond issue was defeated.[15]

This particular type of "political warfare" amplifies yet another cost of government intervention by IDAs which tends to reduce the economy's productive capacity. Namely, the existence of a mechanism for distributing IRBs creates "economic rents" or above-normal profits. Consequently, resources will be used in obtaining, maintaining, extending, and (by some) eliminating these rents. The use of resources for purposes of "rent seeking" (and "rent avoidance") represents a deadweight loss to society since these resources are used in attempts to transfer wealth rather than to produce additional goods and services.[16] The establishment of industrial development agen-

[14]*Moody's Bond Record*, January 1981, pp. 109–22.

[15]Congressional Budget Office, p. 30.

[16]For a discussion of rent seeking see James Buchanan, Robert Tollison, and Gordon Tullock, eds., *Toward A Theory of the Rent-Seeking Society* (College Station, Tex.: Texas A&M Press, 1980).

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cies will therefore reduce the economy's productive capacity, but provides a means by which local politicians can capture rewards (political profit) from handing out government empowerments. For example, in 1980 the village of South Barrington, Illinois, sold $18 million worth of IRBs to finance two Marshall Field department stores and a Carson, Pirie, Scott department store. For its efforts the local IDA managers collected "fees" of $100,000 from Marshall Field and $67,000 from Carson, Pirie, Scott.[17]

The lobbying costs of IRB beneficiaries are only a part of the total costs associated with rent seeking. Total rent-seeking costs would include those borne by firms which lobbied unsuccessfully for subsidies as well as those borne by investment bankers and law firms which also benefit from increased IRB sales, and by those businesses, i.e., smaller merchants, who oppose IRB financing. For example, the first vice-president of a major investment banking firm has boasted that "we've been responsible for changing the laws (regarding enabling legislation for IRB sales) in fifteen states."[18]

There are, of course, benefits to IRB finance inasmuch as IRBs provide a form of tax relief, albeit indirect. However, it is unlikely that the *net* benefits of IRB finance would be positive, given the costly economic distortions discussed above. Ideally, the free access of all firms to IRB finance would be more conducive to stimulating production and employment while limiting various economic distortions. Such an alternative would be analogous to across-the-board reductions in the taxation of corporate income, but is not likely to materialize.

Summary and Conclusions

In sum, industrial revenue bonds tend to distort, rather than facilitate, the market process. Both consumer sovereignty and production efficiency are compromised when IRBs are used to support failing or inefficient business enterprises. Further, the increasing use of IRB finance alters relative prices, which makes it more costly for consumers and producers to make accurate decisions regarding resource uses. The entrepreneurial process whereby resources are put to their most highly valued uses is disrupted. In essence, IRB finance substitutes political resource allocation for the market allocation of resources, and the results are neither efficient nor equitable. The economy's productive capacity is reduced when IRBs are used to

[17]*Chicago Tribune*, May 11, 1980.
[18]Walsh, p. 151.

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selectively help some firms through special tax exemptions chosen by political rather than economic criteria, and when resources are used to obtain such exemptions rather than to produce additional goods and services.

While it is indeed desirable to reduce the burden of corporate taxation and regulation, there are surely more direct ways of doing so rather than the selective distribution of industrial revenue bonds.

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COMPULSORY UNIONISM AND THE FREE-RIDER DOCTRINE

John C. Moorhouse

I. Introduction

Section 9(a) of the National Labor Relations Act of 1935 provides that a union, established by a majority vote of the employees in a bargaining unit, must accord all employees in the unit the benefits of union representation. Many students of the American union movement interpret this legal obligation as potentially threatening union security because of the free-rider phenomenon. Typically, they argue that since an employee receives union benefits regardless of his membership status, economic self-interest will lead him to accept the benefits without incurring the pecuniary and non-pecuniary costs of joining and supporting the union. The employee becomes a free rider.

From the individual employee's viewpoint, he can be in one of three situations (from best to worst): (1) free ride in an organized shop; (2) join and support the union; or (3) work in an unorganized shop. The perverseness of the incentive system under Section 9(a) is that the pursuit of (1) leads to (3). The free rider has an incentive to vote for the establishment of a union, but no incentive to support it. In other words, the individual employee has little incentive to consider the costs he imposes on fellow workers when he becomes a free rider. He looks only to his self-interest, which is served by avoiding union affairs and paying dues. According to Olson:

> . . . a labor union working in the interests of a large group . . . of workers in some industry would get no assistance from rational,

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Cato Journal, Vol. 2, No. 2 (Fall 1982). Copyright © Cato Institute. All rights reserved.

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> self-interested individuals in that industry. This would be true even if everyone in the industry were absolutely convinced that the proposed program was in their interest.[1]

Because this incentive to ride free applies to each employee, presumably the union would face the gradual erosion of members and support. Over time the union would become less effective. At some point, the loss of effectiveness would lead to a deterioration in the quality of union services and in its ability to negotiate and administer contracts. Employers, sensitive to the union's loss of members, could exacerbate the situation by becoming increasingly adamant at the bargaining table and in settling contract grievances. This cumulative process then accelerates the demise of the union. Thus, when all the relevant costs and benefits to the employees in a bargaining unit are reckoned, there is insufficient support for the union *in the absence of coercion*. Union security depends on compulsory unionism. This conventional conclusion is enshrined in Section 8 (a)(3) of the Labor Management Relations Act of 1947.

Unfortunately for public policy, this rationalization for compulsory unionism rests on several assumptions that are rarely made explicit and rarely subjected to careful analysis. The purpose of this essay is to logically dissect the free-rider doctrine. We proceed on the assumption that unions do generate net benefits for the employees they represent. However, since this is itself a dubious assumption, the empirical evidence concerning the union generation of employee benefits is reviewed briefly in section four.

II. The Free-Rider Doctrine

The analytic core of the free-rider doctrine is provided by the theory of public goods. According to this view, union benefits are analogous to a public good and, therefore, the theory of public goods clarifies the nature of the possible market failure manifested in the behavior of free riders. Formalized in two papers published in 1954 and 1955 by Paul Samuelson,[2] the theory attributes two characteristics to public goods that distinguish them from private goods—non-excludability and joint consumption.

Non-excludability means it is economically infeasible for the supplier of a good to exclude others from its consumption, regardless of

[1]Mancur Olson, *The Logic of Collective Action* (Cambridge, Mass.: Harvard University Press, 1965), p. 11.

[2]Paul A. Samuelson, "The Pure Theory of Public Expenditures," *Review of Economics and Statistics*, November 1954; and "Diagrammatic Exposition of a Theory of Public Expenditures," *Review of Economics and Statistics*, November 1955.

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whether or not they have contributed to the costs of its production. And joint consumption means the benefits obtained by any single individual in consuming the good in no way reduces the consumption benefits available to others from the same commodity; i.e., consumption is non-rival.

Clearly a private good possesses neither of these characteristics. Consider a trivial case. If Wilson sells apples, he can easily exclude others unwilling to pay the unit costs of production from consuming his apples. When Brown purchases and eats one of Wilson's apples, it is no longer available for consumption by another individual. The exchange between Wilson and Brown confers no benefits nor imposes any costs on third parties to the transaction. All the relevant costs and benefits are taken into consideration by both parties to the exchange; none are external to the exchange decision. For private goods, exclusion is both technically feasible and economic, and consumption is rival. Under such circumstances, the market allocates resources optimally because at the margin, voluntary exchange equates benefits and costs; i.e., those receiving the benefits of the good bear the full costs of its production.

Now consider the case of a public good. Suppose that in a hypothetical country, it was decided that national defense would be financed by voluntary contributions. Further assume that each citizen desires an effective defense system and appreciates its benefits. According to the theory of public goods, each citizen has an incentive to understate his demand for national defense because each realizes that if his countrymen provide for defense, he will receive the benefits regardless of whether he makes a contribution (non-excludability). In deciding how much to contribute, or whether to contribute at all, the rational citizen looks only to his self-interest without taking into consideration the benefits that would be conferred on fellow citizens by his contribution. Further, the protection afforded an individual citizen by a national defense system in no way diminishes the protection available to other citizens (joint consumption). Thus, under a voluntary market for the provision of national defense, those receiving benefits do not necessarily bear the costs, and not all benefits are included in the calculus of self-interest. For these reasons, a decentralized market system theoretically may fail to provide the optimal quantities and qualities of some public goods. The conventional conclusion is that the provision of such goods is assured only if they are financed through compulsory tax collection.

Many economists assert that like a public good, the provision of union services entails non-excludability and joint consumption.[3] This

[3]See Olson and Samuelson for examples of this view.

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view is put forth most forcefully by A. G. Pulsipher in an article entitled: *The Union Shop: A Legitimate Form of Coercion in a Free-Market Economy,* in which he argues that union services precisely fulfill the criteria of public goods.[4] To analyze this thesis, we shall first categorize union services and then determine their conformity with the public-good criteria.

Union services include: (a) higher wages and more generous fringe benefits; (b) assistance in the settlement of grievances; (c) better working conditions – including more easily operated and safer machinery, clean lavatories, and better health centers; (d) insurance; (e) sponsorship of social events, conventions, and union newspapers; (f) retirement homes for former members; and (g) charitable contributions and support for "friendly" political candidates and "pro-union" legislation. The relevant question is: Which of these services are public goods and which are private goods?

Non-excludability

On the criterion of non-excludability, categories (d), (e), and (f) present no difficulties. Members who choose not to pay insurance premiums, or purchase tickets to social events, or subscribe to union newspapers, or pay an admission fee to a union retirement home will not receive the service. Nor does union subsidization of these services modify the analysis, for the fact remains that it is economically feasible to exclude employees with a fee system tied directly to the costs of providing these services. Judicial interpretation of Section 8(a)(3) supports this contention by excusing non-member union affiliates from paying dues covering the costs of such services.[5]

Charitable and political contributions, item (g), potentially give rise to two distinct kinds of benefits. The first is the recognition benefit accruing to an individual because it is known that he made a donation to a charitable or political cause. Unionists typically argue that if the union makes such a donation all members of the union obtain recognition benefits regardless of whether or not they have contributed. Therefore, the argument concludes that all members should pay mandatory assessments. This argument is bogus. The union could solicit voluntary contributions and exclude non-donors from recognition benefits through the simple expedient, widely used

[4]A. G. Pulsipher, "The Union Shop: A Legitimate Form of Coercion in a Free Market Economy," *Industrial and Labor Relations Review,* July 1966.

[5]Thomas R. Haggard, *Compulsory Unionism, The NLRB, And The Courts* (Philadelphia: Industrial Research Unit, University of Pennsylvania, 1977), p. 78–93.

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under such circumstances by other private organizations, of maintaining and publicizing donor lists.

A second kind of benefit may arise particularly from political contributions. Suppose, for example, union support of a lobbying effort leads to a more favorable legal environment within which the union operates. Presumably all union members would benefit, contributors and non-contributors alike. Several observations are in order: (1) in most cases, the thread from the individual's contribution through the union to the recipient organization and finally through the benefit-generating process seems tenuous in terms of concrete benefits to an individual; (2) such benefits may not be perceived as beneficial by every union member; and (3) any externalities arising here have nothing to do with *union* administration of such donations. Many private organizations rely on voluntary contributions, which in turn are used to influence legislation. Unions are hardly unique in this respect. Thus, these externalities do not justify mandatory assessments for political causes. The courts already exclude affiliates from making compulsory prorated payments for such purposes and excuse dissenting union members.[6] Not only is exclusion feasible, there is evidence that many union members object to union involvement in political activities.[7] Such activities can hardly be thought of as collective goods to those employees who object to them.

Unions could also exclude members and affiliates from using the union-administered grievance procedure by returning a portion of their dues and allowing them to represent themselves or by charging a fee for setting up a grievance procedure based on hours of shop stewards' time involved, for example. The latter might work better than the present system, since an individual with a minor complaint, or a grievance without merit, would be less likely to waste union officials' time, while an employee who feels strongly about his case could purchase additional assistance. Such a pricing system would allocate the optimal amount of assistance to each employee.

The reason unions do not charge a grievance procedure fee is not that the service represents a public good, but because it allows the union to discriminate among employees and to discipline those out of favor with the union leadership.

A stronger case can be made that non-excludability is a characteristic of improved working conditions. If a union insists, for example,

[6]See *International Association of Machinists* v. *Street*, 367 U.S. 740 (1961) and *Sealy* v. *McDonnell Douglas Corp.*, 427 F.2d 996 (9th Cir. 1970), at 1000–1001.

[7]Robert W. Miller, et. al., *The Practice of Local Union Leadership* (Columbus: Ohio State University Press, 1965), p. 168–169.

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that better lighting fixtures be installed, all employees in the shop benefit. Yet even here the argument faces difficulties: (1) the benefits attributable to union action are likely to be trivial; (2) at most, it makes a case for minimum health and safety standards, not compulsory unionism; (3) union job assignment discretion whereby workers are assigned to newer, easier to operate, and safer machines, vitiates the argument that such benefits are available to all workers; and (4) competitive market pressures tend to insure that the employer will install equipment and maintain general working conditions that are optimal from the employees' viewpoint.

Finally, there are the benefits generated by collective bargaining over wages, hours, fringes, and working conditions—categories (a) and (c). Judicial interpretation of present labor law is predicated on the assumption that non-excludability is a characteristic of union representation. This interpretation, which is widely held among scholars, is incorrect for two reasons. First, unions legally represent all employees in a bargaining unit, because such representation is mandated by Section 9(a) of the NLRA, not because exclusion is technically or economically infeasible. The union need only bargain and enforce contracts on behalf of its members, leaving all other employees to negotiate and enforce their own agreements. *The free-rider rationale of compulsory unionism fails if it is a problem born of law and not economic conditions in labor markets.* To argue otherwise is to argue that a defective law (Section 9(a) – the exclusive representation principle), which abridges the contract rights of employees, creates a problem (the free rider) and that this problem justifies another law (Section 8(a)(13) – compulsory unionism), which further restricts the rights of employees. The linch pin in the argument is the necessity of exclusive representation. Advocates of compulsory unionism have the unenviable task of documenting the necessity of exclusive representation in the face of contrary evidence from other countries.[8]

Second, those who argue that union representation is characterized by non-excludability implicitly assume that the benefits of collective bargaining are distributed equitably among employees. A widely accepted standard of wage equity is that an individual's hourly earnings be tied to his productivity. But this is the exception, not the rule, in organized shops. Super-seniority for union officials; wage rates based on seniority diverging from measured productivity; the determination of job assignment, job-bumping rights, job security, and

[8]Everett M. Kassalow, "Will West European Unions Embrace the Union Shop?," *Monthly Labor Review*, July 1979.

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assignment to overtime all by seniority; compressed wage differentials negotiated by the union; and union resistance to job evaluation all tend to sever the link between effort and reward. This pattern of wage, job assignment, and job security determination is endemic to collective bargaining even in the absence of conscious union discrimination against disloyal employees.

Joint Consumption

Not only do most union services fail to satisfy the non-excludability criterion, they also fail to satisfy the criterion of joint consumption. Union insurance, retirement homes, newspapers, plant infirmary services, and safer machinery are not jointly consumed. Worker A's insurance policy protects himself and his beneficiaries; Worker B's moving into a union retirement home means that another worker cannot occupy that suite; and the attention given Worker C by a nurse in the plant infirmary means that her services are not available to other workers during that period. The individuals appropriating the benefits of these services are readily identifiable and can be made to bear the cost of the services.

Some union services, including the sponsorship of social events, charitable and political donations, safer machinery, and better lighting and ventilation, may involve an element of joint-consumption, but none are pure public goods and do not justify compulsory unionism. In the case of social events, the beneficiaries are identifiable and the good cannot be jointly consumed beyond the capacity of the facility housing the affair. Charitable and political contributions, meanwhile, impose psychic costs on employees who object to them (a view upheld by the courts). Safer machinery does not qualify, because of union job assignment discretion. Finally, better working conditions, while they qualify as collective goods, do not justify compulsory unionism for the reasons offered earlier.

That leaves for our consideration the major benefits of collective bargaining—higher wages and fringe benefits. To the extent that a union raises wages above those that would be paid in a competitive labor market, some workers will fail to gain employment in the affected industry and some current employees will be discharged. The necessary and sufficient condition for this result is a downward sloping demand curve for labor with respect to the wage rate, i.e., *ceteris paribus*—the higher the wage the lower the quantity of labor services demanded. (The *ceteris paribus* condition is satisfied because by assumption the union is responsible for the higher wage.) In other words, some subset of the original work force, those who remain employed, may enjoy the increased benefits of collective bargaining,

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but only at the expense of lost jobs for fellow union members and potential employees. When a faction within a union pushes for higher wages resulting in the loss of jobs for members with low seniority, or when older union members insist on a more generous pension program resulting in a smaller increase in other benefits for younger members, or when the skilled members of a local obtain a wage differential adversely affecting the wages of unskilled members, then the benefits of collective bargaining *do not* involve joint consumption. But these are precisely the tradeoffs union officials are pressured into negotiating by competing factions within the union. At any given time, a majority, or even an influential minority, of union members can win benefits through collective bargaining, but these benefits will not and cannot be jointly consumed by all members and affiliates of the union. Affiliates, compelled to pay dues, do not even have a voice in the design of union policy. Collective bargaining redistributes labor income among organized employees and between organized and unorganized workers. The redistributive effects of collective bargaining violate the joint-consumption characteristic of a collective good.

The free-rider rationale for compulsory unionism depends on the crucial analogy between union services and public goods. A careful analysis of the services provided by unions demonstrates that: many of the services do not exhibit public good characteristics; those that do, involve trivial benefits that are satisfactorily provided in competitive markets because all relevant costs and benefits are internal to the firm, or, barring that, justify, at most, minimum health and safety standards, not compulsory unionism. Finally, the excludability from and the redistributive effects of union wage benefits disqualify them as collective goods. In short, the free-rider problem is the consequence of existing labor law that is based on a fundamental misunderstanding of the nature of union services.

Dues and Costs

The free-rider argument contains another analytic flaw. It implicitly assumes that the cost of providing union services determines the level of dues employees are compelled to pay. For example, in interpreting Section 8(2)(3), the court reasons from appropriate union services to the objective costs of providing those services to the obligation of employees to pay a reasonable level of dues. Even if the court does not actually engage in cost accounting, the reasoning is from costs to dues, or, higher costs justify higher dues. The reverse relationship is more nearly correct: Revenues generated by compulsory dues and fees determine the costs of union services.

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Unions are nonprofit organizations. Their operations, like those of the Lions Club, the Educational Testing Service, and the Ford Foundation, generate revenue, none of which can be distributed to the owners of the organization but must be spent on the organization's activities. Since there is no market for union services in the sense that unions regularly compete for members by offering them alternative benefit packages, union officials are in an ideal position to exercise discretion in determining the level of dues and the composition of union expenditures. Thus they are able to appropriate at least some of the benefits of an increased flow of revenue to the union. They dare not attempt to appropriate all or even most of the benefits for higher salaries, for instance, without running the risk of generating a reform movement among the rank and file. New expenditures more typically fund improvements at union headquarters, expanded membership drives, more generous strike benefits, enlarged union staffs, country club memberships for high-ranking union officials, more frequent attendance for a larger number of officers at international union conventions, and more generous expense accounts. By talking about a nicer headquarters building, the importance of new members, and the cost of better legal advisors, union leaders can more readily justify a hike in dues.

None of this is or should be illegal. Except in the case of fraud, the legislature and court have no special competence in determining the categories, quality, and quantity of appropriate union services. But the point remains that union officials can enlarge the benefits of leadership by effectively compelling employees to pay higher dues and then influencing the way in which the new revenues are spent.

Three conditions make this indirect strategy feasible: the lack of competition in the provision of union services, the absence of claims on the net revenue of union operations, and the impossibility of direct appropriation of the net revenue by union officers. The only benefits appropriable from the net revenue lie in determining how they will be spent. The latter is true of any nonprofit organization, but, in this instance, the difference is that the union can compel support. Under these circumstances, there can be no presumption that the composition or quantity of union services provided are optimal from the viewpoint of the rank and file; nor is the court or the NLRB competent to determine *ex cathedra* what would be optimal. The discretion of union leadership in setting dues and influencing the composition of union expenditures undermines the view that the law merely compels those who would otherwise be free riders to pay their fair share of the objective costs of appropriate union services. Here, as else-

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where in the absence of competition and profit taking, revenues determine costs.

Free Riders and Forced Riders

The image of a free rider is that of a cynical opportunist capable of grabbing the benefits the union is compelled to extend without supporting the organization. A somewhat skeptical note about this view is sounded by Earl Brubaker.

> From one point of view the orthodox assertion of the eminence of the free rider seems to resurrect the old image of economics as the dismal science, for it seems to stress the corruptibility of man. Free-rider behavior involves, after all, what is frequently referred to as cheating strategy. Each individual betraying the confidence of his community, engages in deceit to avoid paying the price that he himself regards as an appropriate measure of its value.[9]

Do individuals who stand to gain from union activity, who share a common experience with fellow workers, who number among their friends at least some of the "guys down at the plant," hypocritically exploit those same fellow employees? Are individuals in such circumstances more likely to empathize with fellow employees and join in common causes or remain outside the group and run the risk of being labelled an outsider, hypocrite, adversary, and free rider? Does peer pressure, well short of coercion, mean nothing? What seems more probable is that those who refuse to support the union (if given the opportunity) do so either because of genuine philosophic reservations or because they expect to suffer economically as a result of union action. Coercing an individual into expressing support for something he does not want or regards as harmful is repugnant to our sense of fair play, violates our cherished belief in freedom of choice, and is fundamentally demoralizing.

Only the individual can assess the subjective benefits of union membership; no outside, objective measure of these benefits exists to be imposed on individuals without giving rise to unintended and detrimental side effects, e.g., rank and file apathy toward the union, corruption, and employer-union leadership discrimination against employees. Little attention has been focused on the welfare implications of the "forced rider." How do the benefits unions accord the majority of their members compare with the costs imposed on a minority by forcing them to support the union? No detailed answer can be given here, but two things are clear. The majority need not

[9]Earl D. Brubaker, "Free Ride, Free Revelation, or Golden Rule," *Journal of Law and Economics*, April 1975, p. 153.

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lose their benefits when they free the dissident minority of its obligation to support the union, and it is highly unlikely that compelling all workers in a bargaining unit to support the union maximizes employee welfare. Consider our judicial system. "A man is presumed innocent until proven guilty" on the basis of "evidence beyond a reasonable doubt." Such a system goes to extraordinary lengths, even allowing some criminals (read: cynical opportunists) to go free, in order to protect the innocent (read: those harmed by the union or having philosophic reservations about unionism). Incarcerating all individuals who may have been involved in a crime or forcing all employees in a bargaining unit into a union is not optimal on welfare grounds. The rights of dissidents matter in the design of public policy.

III. Useful Applications of the Theory of Public Goods to Union Conduct

The theory of public goods applies accurately to union behavior in two instances. To the extent that current labor law confers monopoly power on unions, it creates a public "bad."[10] Unions do not take into consideration all the negative third-party effects, such as lost production, higher consumer prices, and increased structural unemployment, resulting from their conduct. As Professor Stigler observed, "The major modern non-competitive force on wages is the labor union. The labor union is to the labor market the equivalent of the cartel in the product market."[11] And as Barbara Woolton approvingly noted, "It is in fact the business of unions to be anti-social; the members would have a just grievance if their officials and committees ceased putting sectional interests first."[12] The theory of public goods calls into question any law preserving the monopoly power of a special interest group. On this score, it seems applicable to labor unions.

In the second instance, the theory explains why, when a majority within the union favors deauthorization of the union security agreement (under Section 9(e)(1) of the LMRA, as amended) or even decertification, the union leadership has little to fear. The probability

[10]John Burton, "Are Trade Unions a Public Good/Bad: The Economics of the Closed Shop," unpublished paper, 1977. In addition, see Daniel Orr, ed. "Symposium on Economic Aspects of Union Membership: Free Riders or Paying Customers?," *Journal of Labor Research*, Fall 1980.

[11]George Stigler, *The Theory of Price*, 3rd ed. (New York: MacMillan Co., 1966), p. 267.

[12]Barbara Woolton, *Freedom Under Planning* (London: University of London Press, 1947), p. 97.

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of action being taken is small because the expected costs imposed on the individual initiating, or even lending his name to, such actions far outweigh the expected benefits to that individual. Across all employees the benefits may be substantially greater than the costs of forcing a deauthorization or decertification election, but those benefits are dispersed throughout the membership, while the costs are borne by a small and vulnerable number of employees. In such a situation the unhappy majority is likely to remain passive and the benefits of an election lost. Their continued support of the union cannot be construed as revealing their true preferences. The theory explains why outspoken anti-union activists may not be the only employees trapped in an established union.

IV. The Magnitude of Union-Won Benefits

We have assumed that unions generate net benefits for their members in the form of higher wages and more generous fringe benefits. It is important to explore this assumption, because if unions obtain no net benefits or obtain them primarily via legally sanctioned monopoly power, the case for compulsory unionism is further weakened. While no comprehensive survey of the existing literature is attempted here,[13] a careful summary of the literature is instructive.

Since World War II economists have undertaken many studies estimating the impact of unions on wages (including fringe benefits) and wage structures. Not surprisingly, since the studies cover a variety of industries and time periods, some studies have found relatively large union-induced wage gains while others have found negligible or even negative effects on the net wages of union members. In his masterful book published in 1963, H. Gregg Lewis surveys the best studies available at the time, corrects the deficiencies he perceives in them, and presents his own union wage effect estimates.[14] The industry-wide studies reviewed by Lewis cover 17 industries, employ data from 1909 through 1957, and reveal relative wage effects running from a high of 25 percent for skilled construction workers (1939) and airline pilots (1956) to a low of negative 5 percent for steelworkers (1945–9 in Youngstown and Chicago). Lewis's own economy-wide estimates of union wage effects, for various periods from 1923 through 1958, similarly run from a high of 25 percent (1931–33) to less than 5 percent (1945–49).

[13]See C. J. Parsley, "Labor Unions and Wages: A Survey," *Journal of Economic Literature*, March 1980.

[14]H. Gregg Lewis, *Unionism and Relative Wages in the United States* (Chicago: University of Chicago Press, 1963).

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From a review of these findings several observations can be made. First, for the most part, the estimated wage effects are small, say on the order of 10 percent. Second, in those exceptional cases where unions appear to have obtained substantial wage increases (15 percent and above) over competitive rates, market and institutional factors, quite apart from unionization itself, seem to explain the apparent success of the union. The skilled construction craft unions, for example, have been successful in large measure because they block entry into the construction trades and maintain preferential hiring halls. The airline pilots union, seafarers union, and transit unions have been successful because they have organized either regulated industries, where government rate-making rules permit firms to pass on higher labor costs without fear of interfirm competition, or government-owned enterprises, where political expediency militates against resisting union demands.

Third, in analyzing the relative wage differential between union and non-union workers, Lewis distinguishes between the relative wage increments won by unions for those employees they represent above the wages of all labor, and the union-induced wage cuts imposed on nonunion employees below the average wage of all labor. In other words, collective bargaining has twin effects. It raises the relative wage of organized labor while depressing the relative wage of nonunionized labor. The latter effect stems from the induced unemployment in the unionized sector spilling over into the nonunionized sector. Throughout the period Lewis examined, approximately 80 percent of the total union-nonunion wage differential represents a higher relative wage for organized labor, and 20 percent represents a depressed relative wage for nonunion labor.[15] Thus, casual inspection of the total wage differential overstates the net economic benefits that unions obtain for their members.

Rees, in a separate study, concluded that collective bargaining was not a significant factor in influencing wage increases in the steel industry after World War II.[16] Maher found that ". . . there are no significant differences in the wages of union and nonunion workers" in seven industries including paints and varnishes, hosiery, furniture, automotive parts, footwear, dresses, and cotton textiles.[17] For a cross-section of industries in 1966, Weiss found no statistically significant

[15]Ibid., p. 193.

[16]Albert E. Rees, "Wage Determination in the Basic Steel Industry," *American Economic Review*, June 1951 and "Reply," *American Economic Review*, June 1958.

[17]John Maher, "Union Nonunion Wage Differentials," *American Economic Review*, June 1956, p. 352.

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union wage effects after allowing for such labor force characteristics as age, education, race, job experience, and regional variables.[18] Fuchs found much the same thing for a cross-section of urban labor markets in 1967.[19] More recent studies by Eckstein and Wilson, Hamermesh, and Ashenfelter and Johnson found no significant union-induced wages effects.[20]

By contrast, Clover, Stafford, and Throop[21] did find relatively large wage effects attributable to union action. However, in a careful reexamination of their results Boskin concludes that their estimates are biased upward because of the use of aggregate earnings data, instead of wage rates, and of the omission of other relevant variables. Boskin's reestimation of their wage equations produced results "much closer to Lewis' original estimates and to those of Weiss."[22]

Another set of studies by Ashenfelter and Johnson, Schmidt and Strauss, and Lee[23] suggested why the above single-stage, least-square estimates of union wage effects may be biased upward. In short, these more recent studies all find that the degree of unionization, the quality of labor, and wage rates are jointly determined. They rejected a simple, unidirectional causal link between the degree of unionization and higher wages by demonstrating that high wages are an important factor in explaining unionization. The authors adduced a number of reasons for their findings which need not be summarized here. What is relevant is that their findings cast serious doubt on the

[18]Leonard W. Weiss, "Concentration and Labor Earnings," *American Economic Review*, March 1966.

[19]Victor Fuchs, "Hourly Earnings Differentials By Regions and City Size," *Monthly Labor Review*, January 1967.

[20]Otto Eckstein and Thomas Wilson, "The Determination of Money Wages in American Industry," *Quarterly Journal of Economics*, August 1962; Daniel Hamermesh, "White Collar Unions, Blue Collar Unions and Wages in Manufacturing," *Industrial Labor Relations Review*, January 1971; Orley Ashenfelter and George Johnson, "Unionism, Relative Wages, and Labor Quality in U.S. Manufacturing Industries," *International Economic Review*, October 1972.

[21]Vernon T. Clover, "Compensation in Union and Nonunion Plants," *Industrial and Labor Relations Review*, January 1968; F. Stafford, "Concentration and Labor Earnings: A Comment," *American Economic Review*, March 1968; A. Throop, "The Union/Nonunion Wage Differential and Cost Push Inflation," *American Economic Review*, March 1968.

[22]Michael J. Boskin, "Unions and Relative Real Wages," *American Economic Review*, June 1972, p. 466.

[23]See Ashenfelter and Johnson; Peter Schmidt and Robert P. Strauss, "The Effects of Unions on Earnings and Earnings on Unions: A Mixed Logic Approach," *International Economic Review*, February 1976; Lung-Fei Lee, "Unionism and Wage Rates: A Simultaneous Equation Model with Qualitative and Limited Dependent Variables," unpublished paper, University of Florida, 1976.

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assumption that unions win significant benefits for their members beyond those offered in competitive labor markets.

The studies cited above deal with the relative wage differential between union and nonunion workers, but additional information is available about how unionization influences *changes* in wage rates over time. The first systematic comparison of union-nonunion wage changes was undertaken by Paul Douglas in 1930. He divided his data sample into organized and nonorganized industries. His findings were twofold: First, soon after initial unionization, union wages climbed more rapidly than nonunion rates, but, second, over the whole period (1890–1926) nonunion real wages rose 237 percent while union wages rose 205 percent.[24] In 1970, Maher reviewed the major studies comparing union-nonunion wage increases. With two exceptions, those studies found nonunion wages to be rising more rapidly than union wages.[25] In summarizing the then extant literature on the subject, Reynolds concluded, "Over longer periods, however, it is by no means clear that union wages rise any faster, on average, than nonunion rates."[26]

To be sure, none of this implies that unionized workers do not enjoy higher wage levels. Rather it suggests that unionization may contribute to a permanent wage differential between union and nonunion workers, differing in size across industries and over time depending on the state of the economy. After the establishment of the differential, however, the course of union and nonunion wages is remarkably parallel. This evidence is consistent with the monopoly explanation of union behavior. The introduction of union monopoly power represents a once-and-for-all structural shift in the relevant labor market, which manifests itself in an initial spurt in union wages. After the union-nonunion wage differential is opened up, the course of wages is largely determined by changes in productivity, technology, product demand, other input prices, and the general state of the economy. If the degree of unionization rises slowly, the time period of adjustment may be drawn out, as will the rise in union relative to nonunion wage rates. The benefits of monopolization come early; thereafter the monopolist fights a rear-guard action to protect his relative market position. Because of the historic pattern of unioni-

[24]Paul Douglas, *Real Wages in the U.S. 1890–1926* (New York: Houghton Mifflin Co., 1930).

[25]John Maher, "Unions and Wage Differentials," in C. McConnell, ed., *Perspectives on Wage Determination* (New York: McGraw-Hill Co., 1970).

[26]Lloyd G. Reynolds, *The Structure of Labor Markets* (New York: Harper & Row, 1951), p. 236.

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zation in the United States, many students of the union movement have overemphasized the benefits of unionization by focusing on the *initial* returns. Recent studies, however, suggest a more skeptical attitude toward the advantages of unionization from the employees' viewpoint.

The significance of this evidence is rationalized away by the unionists' contention that unions raise the wage level of nonunion employees. But Flanagan, addressing this contention, finds no evidence of spillover wage effects from the union to nonunion sector. Quite the contrary, he finds some evidence that competitive market pressures in the nonunionized sector, involving both wage hikes and cuts, influence union settlements. First-year union contract terms are particularly sensitive to nonunion wage changes. Flanagan explains this pattern of influence running from nonunionized labor markets to unionized markets by the relative inflexibility of union wage rates negotiated on a multi-year basis. He concluded:

> . . . the importance of wage contagion is limited. The greatest impact of some highly visible collective bargaining settlements is on other industry negotiations by the same union . . . . union wage gains do not appear to leak out onto the nonunion sector where wages are lower and more flexible.[27]

The evidence does not support the contention that union bargaining in key sectors forces nonunion wage rates upward over time. If anything, it points the other way. Migration of labor out of the unionized sector has a depressing effect on nonunion wage rates. Lewis provided empirical estimates of the migration from the unionized to the nonunionized sector. He found that

> [i]f relative union wages rise 5 percentage points, with 25 percent extent of unionization in the labor force, union sector employment will decline 3.8 percent and nonunion sector employment will rise 1.3 percent.[28]

The magnitude of this effect depends crucially on the state of the economy, being more pronounced during downturns when union-enforced wage rigidity exacerbates unemployment in the unionized sector.[29]

This brief survey indicates that it is easy to exaggerate the net benefits won by unions for the employees they represent. For the

[27]Robert Flanagan, "Wage Interdependence in Unionized Labor Markets," *Brookings Papers on Economic Activity* #3 (1976), p. 673.

[28]Lewis, "Relative Employment Effects of Unionism," *Industrial Relations Research Association Proceedings*, December 1963, p. 112.

[29]Lewis, *Unionism and Relative Wages*, p. 191–194.

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most part, the evidence suggests that unions win negligible benefits. In those exceptional cases where union-won benefits appear significant, the evidence is at least consistent with the thesis that unions exercise monopoly power. Both results weaken the case for a public-policy compelling employee support of unions.

V. Conclusion

The free-rider rationale for compulsory unionism fails because it is rooted in an extraordinary view of human nature; because the free-rider problem is a product of the law and not economic conditions in the labor market; because union services are not public goods; because, in general, unions are not a source of significant benefits; and because the inequitable distributions of union benefits and union-induced unemployment give rise to forced riders. Myths matter. And no socio-economic myth has had greater influence in shaping labor law than the myth that compulsory unionism is necessary for union security and equitable for employees.

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BUDGETARY REFERENDA: AN EFFICIENT ALTERNATIVE TO REPRESENTATIVE DEMOCRACY

Roger A. Arnold and *Thomas L. Wyrick*

Introduction

In any complex environment, it is often difficult to determine whether policy failures are caused by incompetent decision makers or by the institutional setting in which those individuals must operate. The issue is an important one, for it is doubtful that failed organizations will recover unless the *appropriate* changes are made, be they in personnel, or institutions, or both.

This is an important distinction, even if it is seldom made. The view taken here is that as a group, elected officials probably arrive at about the same policy decisions that a random sample of "reasonable men" in similar circumstances would. Thus, selecting new officials is probably not an effective way to alter the nature of government over the long run. Institutional reforms may be required to accomplish this goal. To put this in better perspective, consider the fact that modern-day presidents from both political parties have so far failed to eliminate either the budget deficits or the accompanying inflation that most Americans say are unacceptable.

It is probably in the nature of man to hope that "better" people will make for "better" outcomes, and occasionally they do, given the individual nature of value judgments. But just as often they do not. Socialism is not made appreciably better by better socialists, and for the purposes of this paper, representative democracy is not made appreciably better by better politicians. Unfortunately, even politi-

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cians that most of us judge to be better than their predecessors are likely to sense a deep degree of frustration when trying to make fundamental changes. Good intentions do not always meet with desired outcomes.

In the latter half of the 20th century, many Americans have developed a deep concern about losing control of their lives and property to politicians, bureaucrats, special interest groups, and federal judges. One may argue that to contain government within proper boundaries it is necessary only to vote out of office the politicians who support the present trend and to replace them with others who would reverse it. But what then? The opportunity for abuse would still exist and history rejects the view that profitable opportunities remain unexploited for an indefinite period of time. We conclude that, at best, a change of personnel is only a short-run solution to our problems.

The discussion that follows examines these issues and more. It will describe the present political situation in more detail, note many of the outcomes it produces, and then offer a proposal for institutional reform. Finally, it will show how things might change given the implementation of the proposal.

Representative Democracy

In a representative democracy qualified persons are free to select a relatively small number of individuals to represent them in matters that concern the governance of the nation.

In this setting, when an individual votes for one candidate over his opponents, the voter is not endorsing the candidate's positions on all issues, but rather has selected the candidate over his rivals on an *overall* basis. Alternatively, one might say that a candidate represents a "bundle" of policies, and even though some of the policies in that bundle fall short of perfection, the bundle is nevertheless chosen as long as it provides greater benefits than other possible bundles.

Offsetting these inefficiencies, representative democracy substantially reduces the cost of gathering information about what are often quite complicated issues and eliminates the need for citizens to cast hundreds of votes annually.

Over all, then, citizens elect representatives to lower the cost of governance (to themselves), and as a result, representatives cannot present the point of view of every citizen. As economists are fond of saying, there are tradeoffs: One purchases an automobile that is not entirely to his liking, but gains from the economies achieved when thousands of buyers "agree" on the same model; a wife suffers with

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the bothersome habits of her husband, and he with hers, because of other compensating aspects of their marriage; citizens prefer to vote on a bundle of policies rather than on particular ones because decision-making costs are reduced by more than the costs incurred when each citizen gives up the right to represent his own interests.

However, a desire to lower the cost of achieving some ultimate goal is only one reason that issues or policies may be grouped into an indivisible bundle. To again use the jargon of economists, bundling may also occur when the only supplier of a product (a monopolist) seeks to exploit his position by "forcing" customers to purchase other products from him that they otherwise could, and would, obtain elsewhere.[1] The gains to the supplier from this type of activity may be substantial since it is possible for him to profit in some endeavor for which he has no particular talent or expertise. The customer, of course, is the loser and for this reason legislation exists to limit bundling in economic markets.[2]

It is not difficult to see that many of the same techniques used by suppliers in economic markets are also available to public officials. What distinguishes the two cases, however, is the fact that in the private sector there are very few pure monopolies (and those which do exist are regulated by the government) so that the opportunity for monopoly bundling is limited; but the government has extensive monopoly control in several vital areas: justice, defense, macroeconomic policy, regulation of markets, etc. Thus, the opportunity for monopoly bundling by public officials exists. The expectation is that they – like private monopolists – will act on the opportunity. If they do, then one should observe behavior along the following lines: After the "basic" government services have been provided, government employees will begin to supply goods and services that can be supplied more efficiently by the private sector. Since both categories of goods are offered in a single bundle, citizens cannot refuse to "purchase," say, postal service and mass transit, without also refusing justice and defense. So the entire package is purchased from government. This bundling increases the "profits" of government in its role

[1]Economists and antitrust lawyers refer to such arrangements as "tying contracts." Tying contracts do not actually force anyone to buy anything, but require the purchase of some product(s) as a precondition for the purchase of others and by so doing confront the buyer with an all-or-nothing decision. For a discussion on tying contracts, see F. M. Scherer, *Industrial Market Structure and Economic Performance*, 2nd ed. (Chicago: Rand McNally & Co., 1980), pp. 582–84.

[2]In a well-known antitrust case, International Business Machines (IBM) was barred from requiring customers who leased mechanical data processing equipment to purchase unpatented tabulating cards from the company. See ibid., pp. 584.

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as a supplier of services, just as it would increase the profits of a private monopolist in identical circumstances. Unlike profits in the private sector, however, public-sector profits cannot be claimed as the *personal* property of any government official. Therefore, these profits are disbursed as salaries, programs, contracts, and transfer payments among the populace in approximate proportion to the political goodwill (i.e., votes) that is engendered by them. (In addition to postal service and mass transit, other "tied goods" might include retirement programs, health maintenance and insurance, higher education, and passenger railways.)

Citizens may object to this trend and try to reverse it by voting for a different set of officials, but several obstacles reduce their ability to accomplish this goal under normal circumstances. First, the replacement of one official by another does nothing to change the *incentive* of *all* officeholders to act as a monopolist. Second, the most basic option available to the customers of a private monopolist – refusing to transact with him – is illegal for the "customers" of government under a system of compulsory taxation. Third, deficit finance, money creation, and regulation are methods of concealing from voters the inefficiencies resulting from monopoly bundling, none of which, we might remind ourselves, are available to private monopolies. Fourth, to the extent that individual government officials are able to place the responsibility for inefficiencies on other officials (one often hears politicians complain about bureaucrats), voters will ignore the monopoly aspects of government and concentrate on electing a candidate who can "bring home the bacon" from Washington. Finally, in the event that a specific group of citizens becomes overly dissatisfied with the results of monopoly bundling, government officials can add new policies to the bundle to benefit individuals in this group, and by so doing, increase their stake in the status quo.

If these conclusions are substantially correct, then citizens have only three options:

1. Accept the institutional setting that already exists and hope that voting for the right candidates can reverse or halt the process described above.

2. Revolt and try to replace the present system with one that is more responsive to the populace. The problem with this option is that revolutions are normally undertaken by minorities and the political systems which emerge are seldom designed to benefit those who were neutral during the revolution.

3. Promote institutional reforms that would limit the ability of government officials to define the scope and dimension of govern-

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ment activities. The outright prohibition of bundling – the power of government officials to decide on a wide range of public policy issues – would, of course, be harmful since one result of bundling is to lower the cost of collective decision making. But in matters that do not require considerable specific information, and when the cost of voting is low, the harmful effects can be reduced by allowing citizens to play a more direct role in deciding what government should or should not do.

Winner-Take-All Elections

Even with constitutional limits in place, majority rule does not always produce desirable results as measured by the preferences of individuals within the majority. As we have seen, this result is, to a large degree, caused by the bundling that is implicit within representative democracy. It also arises because decisions are most commonly made in a representative democracy on a winner-take-all basis.

Such a mechanism places many individuals in something of a dilemma as to whom to vote for. Consider, for example, the presidential election of 1980. Voters were given the choice among three major candidates – Carter (C), Reagan (R), and Anderson (A). It is important to note that Anderson was generally believed to have almost no chance of winning.

For citizens who ranked the three major candidates (in order of preference) A, C, R, there was something other than one's true preferences to consider. Most understood that voting for A could not elect him, but by diverting votes from C, would increase the probability that R – their third choice – could win the election. To them, voting for A might turn out to be the same thing as voting for R. Given this situation it might seem more sensible to vote for one's second choice so that one's third choice would not be the winner. And, of course, the same dilemma was present for those individuals who ranked the candidates A, R, C.

In game theory, such behavior is known as a minimax strategy – minimizing the maximum dissatisfaction that can occur. Whether strategic or nonstrategic ("truthful") votes, winner-take-all elections may provide false or misleading signals to policymakers, and they may implement programs that are neither intended nor desired by the citizenry. (Switching one's vote from Anderson to Reagan may be interpreted as support for a stronger national defense even if that is not the intent.) The institutional reform discussed later in this paper provides a means to reduce strategic voting and improve the efficiency of elections for signaling voter preferences.

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Another factor that will be shown to alter appreciably with our institutional reform is the degree of political participation by citizens in representative democracy. A citizen generally has more of an incentive to vote the greater the probability that his vote affects the outcome.[3]

There are a number of factors that can (and do) mitigate the relationship between one's vote and the desired outcome, but one of the more important factors is the winner-take-all election itself. The citizen is aware that his vote will not affect the final outcome unless the election would end in a "tie" if his vote is not cast. Since this is unlikely in a large election, the benefits from voting consist mainly of a feeling that a "civic duty" has been fulfilled – a benefit apparently not great enough to motivate most citizens. The alternative is a system in which each vote has a positive impact on public policy. Then individuals would gather information and vote to compel government to pursue goals consistent with their own.

These undesirable results of winner-take-all elections – a tendency for some citizens to opt out of the political process, and for many of those who do participate to conceal their true preferences – could be reduced by making the connection between one's vote and public policy more direct. In the private sector, one's decisions are informed and, presumably, unbiased for the simple reason that they are decisive: If one wishes to allocate more of his budget to food and less to shelter, then he will. It seems only reasonable, then, that the quality and degree of political participation would increase if votes were more decisive. The proposal outlined below has this result.

Point Voting and Winner-Take-All Elections

In most elections, each voter casts a single vote for the policy or candidate he prefers, but is not allowed to "split" his vote among two or more options. This makes it impossible for the voter to express the intensity of his preferences for different policies and programs beyond an expression of absolute support or absolute disapproval.[4]

[3]Similarly, the incentive to gather information relevant to voting increases as one's vote becomes more decisive. On this and other related issues see Anthony Downs, *An Economic Theory of Democracy* (New York: Harper and Row, 1957) and Gordon Tullock, *Toward a Mathematics of Politics* (Ann Arbor: University of Michigan Press, 1967).

[4]It is possible for those with strong preferences to devote resources to convincing others that a particular policy is desirable. However, even after these lobbying efforts, voters will still prefer some aspects of more than one option. Therefore, the problems described here cannot be eliminated through political contributions and similar efforts.

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The undesirable aspects of this arrangement have been widely discussed by political scientists and economists, who have offered "point voting" as a possible solution. Here, each voter would be given several (say five) votes which he could distribute among options according to the intensity of his preferences. But even with "point voting" there is the winner-take-all dilemma. When elections are decided on a winner-take-all basis, a voter who tries to maximize his personal gain from voting will not necessarily express his true preferences for policies and candidates, *whether or not he can split his vote between two or more options*. Point voting coupled with winner-take-all elections often prompts individuals to cast all their votes for a single option. Once again, there is no gain (other than, we would assume, a negligible psychological one) from voting for an option that is sure to be defeated, even if it happens to be one's favorite. Instead, voters "guess" which two or three options stand the greatest chance of winning and cast all of their votes on the one among these that is preferred. Fortunately, this problem disappears with the elimination of winner-take-all elections; so the reform that will be proposed includes a form of point voting so that voters may more accurately express the intensity of their feelings for various policies.

The Bridge Between Taxes and Expenditures

It is a simple point, but unfortunately one that is often forgotten: Every decision to spend public funds requires government officials to acquire resources from the private sector, either through taxation, borrowing, or money creation. As a result, the quantity of government goods and services increases and the quantity of private goods and services decreases – the latter being the opportunity cost of the former.

Under ideal circumstances, only those government projects that provide positive net benefits would be undertaken. But decisions cannot always be postponed until ideal conditions exist. It is inevitable, then, that government policies which provide negative net benefits will gain approval from time to time. Our objective is to design a process that achieves tolerable efficiency in less than ideal circumstances.

At one level, this entails bridging the existing "gap" in the minds of citizens and public officials between expenditures and taxes, or in a more general sense, between government policies to spend and the opportunity costs of doing so. For example, established procedures allow, and even encourage, *separate consideration* of the ben-

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efits and the costs of a program.[5] During election campaigns, especially, citizens are asked to support the creation or extension of some "public service"; then, perhaps months after the election, they are told that higher taxes are required to finance an expanded public sector. Much the same takes place between elections when elected representatives enact laws that require the expenditure of funds in future years; but how these expenditures are to be financed is not established at the outset, so the actual costs of these "uncontrollable" outlays only become apparent later.[6] It is difficult, if not impossible, to distinguish between efficient and inefficient policies when decisions are taken before a thorough examination of costs has been made. Both for citizens and their representatives, then, the artificial separation of benefits and costs impairs careful decision making. If these procedures cause the costs of programs to be understated relative to the benefits, as is likely since about two-thirds of current government expenditures are required by laws made in past years, then the political process may create or continue policies that do more harm than good.[7]

The obvious solution to this problem is to consider benefits and costs simultaneously; however, this option already exists, and elected representatives appear to have rejected it. Institutional reforms are probably necessary, then, to construct a "bridge" between benefits and costs in the minds of decision makers. Reforms of this nature are hardly a new idea,[8] but because inefficiencies resulting from the separation of benefits and costs were of a relatively small magnitude until the last few years, there has never been sufficient public support to translate these ideas into reality.

The institutional reform suggested below is designed so that citizens, as policymakers, will be forced to recognize that expanding

[5]On this topic, see James Buchanan, *Public Finance in Democratic Process* (Chapel Hill: University of North Carolina Press, 1967), chap. 7.

[6]This process is discussed in more detail by George P. Schultz and Kenneth W. Dam, *Economic Policy Beyond the Headlines* (New York: W. W. Norton & Co., 1977).

[7]A similar, but conceptually distinct, problem may arise when deficit financing is allowed. Then legislators are able to expend funds by borrowing in credit markets, and by doing so, postpone the day that taxes must be increased. To deal with this possibility, it has been proposed that the U.S. Constitution be amended to require a balanced budget except in times of emergency. On this, see Buchanan and Wagner, *Democracy in Deficit* (New York: Academic Press, 1977).

[8]In 1896, for example, Wicksell suggested that a "decision concerning the allocation of . . . costs . . . be made a necessary condition for the approval of any public expenditures." For a complete statement of this proposal, see Knut Wicksell, "A New Principle of Just Taxation," reprinted in Richard A. Musgrave and Alan T. Peacock, *Classics in the Theory of Public Finance* (London: Macmillan, 1958), pp. 72–118.

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specific government programs requires either a reduction of other government activities or less private-sector production.

Suggestions for Reform

We have demonstrated how existing rules and procedures in the United States reduce the ability of citizens to direct the policies of their government. This section outlines a proposal that is designed to reverse this process – to increase the efficiency of the *public sector* at satisfying the desires of the *public*. Before proceeding, however, it is helpful to summarize the ideas for reform that were suggested above:

a. In cases that do not require a considerable amount of specific information, citizens should play a more direct role in defining the types of activities that government is allowed to undertake. The purpose of this proposal is to limit the ability of government officials to institute policies that benefit small groups who support the political ambitions of incumbents, but which are harmful to the general public.

b. When appropriate, winner-take-all elections should be abolished in favor of a system where each vote affects which policies are ultimately adopted. This would increase the incentive to gather information and vote and would reduce the likelihood that voting behavior will be biased by strategic considerations.

c. Some form of point voting should be adopted. Then citizens could divide their support among competing options in proportion to the intensity of their preferences.

d. A decision to increase government spending in one area should indicate the source of funds required to finance that expenditure – whether it is a reduction in government spending in other areas or a reduction in private-sector spending. This would result in the rejection of programs which utilize resources less efficiently than they can be used elsewhere.

We propose a decision-making mechanism which incorporates all of these suggestions: the *National Annual Budget Referendum* (NABR). Under the NABR citizens would allocate resources among executive branch departments and agencies of the U.S. government, and could elect to return resources to the private sector in the event it is decided that the public sector is too large. The following is a formal statement of our NABR proposal:

> No later than June 1 of each year, the United States Government shall distribute or otherwise make available to all eligible voters a

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report, not to exceed twenty (20) pages in length, on matters relevant to the operations of the U.S. Government. Included in the report shall be: a statement of current year expenditures, including the distribution of expenditures among the various functional categories of government activity (e.g., science and technology, health, income maintenance, national defense, etc.); the total amount of spending by all Executive Branch Departments and Agencies authorized by law for the fiscal year that begins on October 1; the distribution of expenditures among functional categories of Government activity recommended by the President and by the Congress for the fiscal year that begins on October 1; and a brief summary of Government operations in each functional category that shall include a general statement of purpose and responsibility, a listing of the major programs administered, new programs to be initiated in the upcoming fiscal year, and the approximate share of expenditures in the functional category used to finance each major program.

During the seven-day period commencing on July 4 of each year, all eligible voters shall be allowed to allocate one hundred (100) "expenditure points" among the various functional categories of Government activity, and may at their discretion allocate points to a separate category designated "Refund". The relative distribution of all expenditure points allocated by voters shall establish the relative distribution of expenditures among categories, and the share of expenditure points allocated to the Refund category shall be used by the Congress either to proportionately reduce all rates of taxation on personal income or to retire debt obligations of the United States Treasury.

All expenditures by Departments and Agencies of the United States Government shall be allocated as described above, excepting only those expenditures included in one or more of the following categories: interest payments on the debt obligations of the U.S. Treasury; expenditures financed from official Trust Funds of the U.S. Government; and Special Expenditures authorized by a two-thirds vote of both Houses of the United States Congress.

Table 1 shows the type of ballot that an individual would complete if the NABR proposal became law. The actual ballot could contain much more detail than this sample ballot, but should be kept easily understandable.

Some Positive Aspects of the Proposal

The NABR proposal provides citizens with a greater opportunity to direct their government than they have now. In effect, *each individual would decide what activities will be undertaken by his share of government.* In this respect the NABR makes public-sector decisions more like those taken in the private sector – not an insignificant

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TABLE I

NATIONAL ANNUAL BUDGET REFERENDUM (NABR), SAMPLE BALLOT

Government Activity	Distribution of Current Budget	Distribution of Budget for Next Year		
		Recommended by President	Recommended by Congress	YOUR VOTE
National Defense	22%	27%	23%	____points
Health	12.5%	13%	14%	____points
Education	8%	6%	10%	____points
Energy	3%	1%	2%	____points
Agriculture	1%	1.5%	2%	____points
Administration of Justice	.9%	1.2%	.8%	____points
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Refund	2.9%	0%	0%	____points
TOTALS	100%	100%	100%	100 points

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accomplishment at a time when so many are frustrated by the "usual" methods of collective decision making.

The proposal does raise a number of questions, however. For instance, to what degree would individuals participate in the political process?

We have already noted that in a representative democracy, where most elections are of the "winner-take-all" variety, individuals do not have much incentive to vote. Nor, we might add, do they have much incentive to generate information relating to voting. With our proposal, however, this situation changes.

First, individuals would have a greater incentive to vote because their vote would be more decisive. If $400 billion in expenditures is allocated by the referendum process and if 100 million citizens choose to participate, each directs $4,000 worth of government activity. This means that votes would have greater value under the NABR proposal, so there would be greater incentive for citizens to vote and to gather information in order to do so intelligently.[9] It is an interesting side note that even if individuals had no more incentive to generate information under this proposal than before, they would still be more informed than they are now. This is because under the proposal the beneficiaries of government programs would have an increased incentive to lobby individuals.

Under present arrangements, the recipients of government spending lobby politicians since it is they who decide how to spend public funds. Since under this proposal some of the power over the purse is moved toward individuals and away from politicians, recipients of tax dollars would tend to lobby individuals more and politicians less. Organizations concerned with national defense would take to the airwaves and to print to advance their belief in a stronger defense capability. Other organizations hoping to meet other objectives through government would likely do the same.

A dialogue of sorts would have been established between the recipients of tax money and citizens. Furthermore, organizations competing for a finite amount of tax dollars would have an increased incentive to monitor each other. For example, social welfare groups arguing for more money for social welfare programs would try to convince taxpayers not to allocate their tax dollars toward national defense but, instead, toward welfare programs. Since other groups would have a similar incentive, we would be placing these groups

[9]The point here is no more complicated than saying that a person will put more effort into maintaining and protecting a $4,000 automobile than a $200 "junker."

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in competition with each other. We could therefore be more assured of getting the facts out.

There is an added benefit: Individuals would become more aware of the organizations that sought government assistance. In other words, they would have a clearer picture of just what government is about. Most individuals know little about the interest groups that lobby government. Special interest groups would be forced to make themselves visible to citizens, for that would be the only way they could generate funding for the programs they favor.

There could be another consequence. Recipient groups of tax money might begin to lobby politicians to do away with government programs other than the ones they benefit from. The reason for this is fairly obvious: With fewer government programs listed on the NABR ballot, the more likely the remaining government programs and their recipients would benefit. Just as producers in the private sector would prefer less competition to more, so would group recipients of tax dollars. If the idea of fewer government programs makes the argument for tax reduction more appealing and practicable, then tax relief advocates should be overjoyed at the prospects of setting up a plan where the State begins to reduce itself.

Finally, a special appeal of the proposal is its ability to give individuals what *they* want through government and not what others think they want or want for them. Also, it provides a fairly quick and efficient means to do this. If, for instance, enough people began to demand more national defense in January 1983, they would not have to wait until the next election to let their demands be known. They could simply "vote" for more national defense when they fill out their NABR ballot.[10]

The proposal also can relieve individuals of voting for a politician who does not fully share their views on all government programs. Say, for example, John Doe is faced with a choice between two politicians, Smith and Jones. Smith wants to increase spending on education and decrease aid to the cities, while Jones wants just the opposite. If John Doe favors increased spending for education and

[10]A point that was not addressed above is that each person's vote is at least partly dependent on the quantities of government goods chosen by others. If Jones, for example, has the power to allocate *all* public funds, he might channel 30 percent to defense; but if others have already voted defense a 40 percent share, and Jones knows this, then he might decide that defense spending is adequate and target the 30 percent (of his share of spending) for refunds or other spending categories.

To provide voters with information about how some are voting, and others are likely to vote, it is suggested that before the vast majority of citizens fill out their NABR ballot, a relatively small cross-section of individuals do so. The results should then be made known to the public at large.

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the cities, who does he vote for? Neither candidate is his perfect choice. He must now choose between increased spending on education and increased aid to the cities. Such a choice would not have to be made, however, if he could simply state his preferences on his NABR ballot. He then could decide between the two candidates on other grounds, such as their positions on tax cuts, foreign policy, etc.

It is an added plus when voters can decide between political candidates using as few criteria as possible. If funding for various programs ceased to be a major issue in election campaigns, voters could concentrate more on another issue that is equally important: how a given amount of government resources can be utilized as efficiently as possible.

Politicians and the Proposal

Perhaps an important consideration here is how politicians would react to the proposal. Initially, we would expect them to be against it. Politicians have never been ones to voluntarily tie their own hands, and this is what they would be doing if they were to turn over to the public the job of deciding how funds are to be spent.

Politicians, however, are extremely flexible individuals. If there were enough public support for the proposal, and this might happen if a politician made it an issue, then other politicians would begin to see its merits. Rarely have we seen the politician who will not accept a limitation on his powers when non-acceptance substantially increases the likelihood that he will lose an election.[11]

If the proposal were implemented, politicians might even begin to feel a sense of relief. With the mechanism in place, part of the pressures politicians now feel from special interest groups would be eliminated. As Professor Hayek has noted: "The only defense that a politician has against such pressure is to point to an established principle which prevents him from complying and which he cannot alter. No system in which those who direct use of resources of government are not bound by unalterable rules can escape becoming an instrument of the organized interests."[12] Simply stated, politicians may be glad to be freed from being an instrument of organized interests.

Some may think that the referendum process will shift the efforts of many special interest groups away from asking politicians for

[11]Recall, for instance, the maneuvering done by California Governor Brown in 1979 during the campaign to reduce property taxes in that state (Proposition 13).

[12]*The Political Order of A Free People*, vol. 3, *Law, Legislation, and Liberty* (Chicago: University of Chicago Press, 1979), pp. 16–17.

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money and toward asking them for special privileges. To be more specific, when a private company cannot get a lucrative government contract or subsidy, what it might do instead is ask for some form of legal restriction on its competitors – perhaps through a quota or tariff on imported goods. Politicians would then feel less pressure from special interest groups on one side but more on another.

But such action does not discredit the merits of the NABR proposal. After all, the right to lobby for favorable regulations and special treatment already exists; the referendum process amounts to a net reduction in the power of government officials, and a net increase in the power of citizens, to direct government activity. If there is a substantial increase in the amount of "creative legislation" aimed at providing off-budget handouts to interest groups, then it is necessary to limit government in areas not examined here – not grant it even greater responsibility, hoping to dilute the effects of objectionable behavior through a greater volume of resources. Limiting government should not be delayed just because we think that politicians can always find new ways around the constraints we establish.

NABR as Public Policy

New public policy proposals, whether "good" or "bad," share one rather burdensome characteristic – newness. Individuals and societies seem inclined to resist change. This partly reflects a skepticism of the new and the untried, and a penchant for maintaining the comfort of the status quo. The NABR proposal has this disadvantage of being new. This would seem to tell us, then, that a phasing-in period might be necessary before the NABR proposal has a significant chance for acceptance and implementation. Overnight changes in public policy are more the exception than the rule. There are two principal ways to proceed: One, the proposal could be debated with the intention of implementing it perhaps three to five years after acceptance. This would allow time to adjust to the new environment. For those individuals who felt they couldn't do as well under NABR as in the present public policy environment, and for those who believe it is only right to give people time to adjust to changing circumstances, this phasing-in period would be a plus.

The same objective could be met, even if the NABR proposal were immediately implemented upon acceptance, by having a weighting system whereby voters allocated only, say, 50 percent of tax revenues the first year of NABR, 60 percent the second year, and so on until NABR was fully implemented.

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Conclusion

Direct democracy is preferred to representative democracy by most individuals if the costs of each are the same. There is a simple reason for this: Those governed would prefer to have more of a say in their lives.

The proposal outlined here is a fairly costless move in the direction of direct democracy and away from representative democracy, and in an area where reform is most needed. It is difficult to see how this could be detrimental to the health of the nation.

In a less than perfect world this proposal offers a means, perhaps even a politically acceptable means, of reducing the power of the State. Even the modern-day anarcho-libertarians, who eschew all forms of taxation as a form of theft, would have to find the proposal somewhat appealing. If taxation is inevitable, it would seem far better to have some say in how the "thief" spends your money than none at all.

Some individuals may believe that the proposal, while perhaps an efficient alternative to representative democracy with respect to spending matters, is, nonetheless, unlikely to be accepted in today's political atmosphere. They should note, however, that we are moving toward a period of constitutional decision making in this country. As of this writing, we are only three states short of a constitutional convention, where a balanced budget rule is scheduled for debate, but where proposals such as NABR could be discussed and acted upon.

Finally, with the growth in the power of government, individuals have come to believe that too many decisions are made for them. They have become the onlookers in a process they are supposed to direct. Here, then, is a simple proposal that seeks to reverse field.

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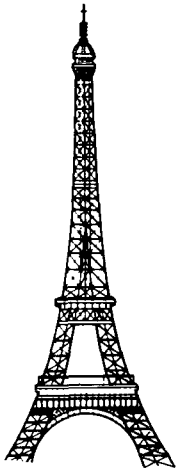

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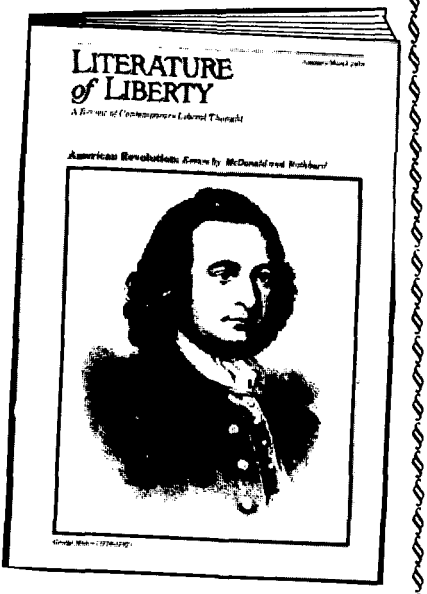

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The Cato Institute

The Cato Institute is named for the libertarian pamphlets *Cato's Letters,* which were inspired by the Roman Stoic Cato the Younger. Written by John Trenchard and Thomas Gordon, *Cato's Letters* were widely read in the American colonies in the early eighteenth century and played a major role in laying the philosophical foundation for the revolution that followed.

The erosion of civil and economic liberties in the modern world has occurred in concert with a widening array of social problems. These disturbing developments have resulted from a major failure to examine social problems in terms of the fundamental principles of human dignity, economic welfare, and justice.

The Cato Institute aims to broaden public policy debate by sponsoring programs designed to assist both the scholar and the concerned layperson in analyzing questions of political economy.

The programs of the Cato Institute include the sponsorship and publication of basic research in social philosophy and public policy; publication of a major journal of public policy analysis and a monthly economic newsletter; production of a daily syndicated public affairs radio program; and organization of an extensive program of symposia, seminars, and conferences.

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FEDERALISM AND FREEDOM

The question of what functions of government should be handled at the federal level, the state level, or the local level and what functions should not be handled by government at all but left to individuals and voluntary organizations is one that has been with us since the beginnings of our country. It's always been a controversial issue but it's become increasingly important during the last few decades as the size and scope of federal intervention in state and local and individual affairs has grown at an alarming rate. This growing centralization of government programs and tax revenues in Washington has distorted the federal system and changed the balance of power among the levels of government. The result has been diminished individual freedom, a decrease in the responsiveness of government at all levels, and I believe an increasing amount of waste, inefficiency, corruption, and extravagant spending that threatens the fiscal solvency of the nation.

—Martin C. Anderson
Former Chief Domestic Policy
Adviser to President Reagan

Address to the Cato Conference on "The New Federalism and Urban Opportunities."

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